The Builder.

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The Trades Union Congress.

THE Trades Union Congress, which assembled on September 4 at Hanley, was attended by 457 delegates, and at the first day's sitting the Report of the Parliamentary Committee was received. This report was chiefly concerned with lamentations over the failure to obtain the Trades Disputes Bill and the Workmen's Compensation Bill, and it included a statement that capital was arrayed against the workers, organised as it never had been before, supported by the immense influence of an unjust state of the law. The President, on the following day, also indulged in some rhetoric and expressed the opinion that the fate of the Trades Disputes Bill "threw a lurid light upon the boasted but absolutely fraudulent representative character of the House of Commons." We cannot help regretting that this annual meeting of the representatives of the Trades Unions should become the occasion of so much rhetorical effervescence. It has been our pleasure to point out from time to time the excellent work accomplished by the Trades Unions, more especially in connexion with their organisation as provident clubs, and since they have also power to further the interests of their members by bringing their legitimate grievances before the public and Parliament, their leaders have yet to learn that these interests are not forwarded by extravagant and irresponsible utterances so much as by the grave and businesslike conduct that they so ably display in many departments under their direction. To talk nowadays of class legislation is to waste the breath, since a study of the statute books of the last thirty-five years incontrovertibly proves that the only legislation that can so be denominated is legislation in favour of the working classes. The history of the Trades Disputes Bill itself is a testimony to the extreme consideration shown by Parliament to their interests. In the first place a Royal Commission was appointed to inquire into and report upon this question. The Trades Unions, in their wisdom, refused to take any part in this inquiry and prevented those whom they were able to influence from giving evidence before the Commission. This was conduct alone sufficient to alienate sympathy from a cause so conducted, but nevertheless a Bill introduced into Parliament dealing with the questions before the Commission, and before it had reported, received careful consideration. The history of this Bill is fresh in the minds of the public. The Trades Unions adopt the attitude of the spoilt child: unless they can have all that they choose to ask for they prefer to take nothing, and it is significant that the amendment upon which their representatives chose to wreck their own and premature Bill was one which compelled pickets to move away where any subject was suffering annoyance from such picket. That Parliament should have considered that anomaly called "peaceful picketing" at all is a testimonial to the care it devotes to subjects connected with the working classes, but that annoyance to the public should have been legalised by Parliament would have been a grievance to a far larger class than the Trades Unionists, and a disgrace to any Parliament. We have frequently been able to show by reference to statistics that the law as laid down in the Taff Vale case has had a most salutary influence on the relations between the Unions and employers: a steady decrease has taken place in strikes, and trade disputes have been settled on a business basis by conference between those directly concerned. That some points require consideration, as, for instance, the exemption of sick pay and benevolent funds from liability, and the law regulating the authority and agency of individuals in relation to the Trades Union funds, is generally admitted, yet these points find no place in the address of the President, who preferred to thunder forth threats as to what the Trades Unions had to "avenge" in reference to acts of commission or omission alleged on the part of Parliament in connexion with recent legislation. One of these acts of omission was the failure to pass an amendment to the Workmen's Compensation Acts. The attitude of the Trades Unions towards this amending Bill is only another example of the impracticable attitude their leaders like to assume on such occasions. At the last Congress the Report of the Departmental Committee

of the Home Office was passed over in silence; and although that Report required careful consideration by those concerned, and the Bill framed upon it has, as we have from time to time shown in these columns, left some points in an unsatisfactory position, no attempt has in the past been made by the Trades Union leaders to draw attention to these questions and to secure a thoroughly workable measure.

This year in the course of the proceedings a fresh resolution was brought forward on the subject of Workmen's Compensation, and some discussion ensued as to whether a system of compulsory insurance on the part of employers against their liabilities under the Acts should be resolved on, or whether it should be State insurance, and in the result a resolution was passed in favour of State insurance. It will be remembered that this question was discussed before the Departmental Committee, and that although they considered it outside the scope of their inquiry, it was recognised that some system to secure the workmen might have to be considered, more especially if the Acts were extended. Another recommendation embodied in the resolution brought forward before the congress was the abolition in the Workmen's Compensation Acts of the clauses referring to wilful misconduct. It really is surprising that any reasonable body of men can be found to advocate a system of compensation to be paid to men who wilfully misconduct themselves. The Workmen's Compensation Acts marked a great departure from principles hitherto accepted when they provided that men who had contributed to an accident by their own negligence should nevertheless have a claim upon their employer; but how can it be to the interests of either the employer or the employed that a workman guilty of wilful misconduct should be placed on the same platform with others? It is possible for a workman still acting in the course of his employment and nominally furthering his employer's interests to injure machinery; if he injures himself in so doing, is he to claim compensation from the employer? The whole doctrine is too absurd.

The Unemployed Workmen's Act is a measure that marks a departure from all the economic traditions hitherto observed. It might have been imagined that such a statute would have been received by the Trades Unions with acclamation, as representing at least, from their point of view, the introduction of the thin edge of the wedge; but in the Presidential address we find it only alluded to as an "abortion" and "a bit of flimsy political window-dressing." It is hard to see how the Aliens Act can be twisted into anything prejudicial to the Trades Unions, yet in the mouth of the President this is made the subject of a grievance, whilst with delightful inconsistency he in the same breath condemns the introduction of alien labour into the mines of South Africa.

On the usual resolution for an Eight Hours' Day it is noticeable that the representative for Lancashire stated that the operatives for Lancashire could not adopt a hard and fast eight hours' day, as their industry had to meet the keen foreign competition of other countries, including America. We heartily congratulate the operatives of Lancashire on their good sense, and their appreciation of the principles which alone can govern commercial prosperity.

The Trades Unions now comprise a very large body of able workers and intelligent men, capable, as they have shown, of excellent management of some of their affairs, and the question for them to consider is, Is it to their interest that their affairs should be brought before the public in the spirit indicated above? They are not political organisations, and much of their influence will be lost if they appear merely as a federation to advance extreme socialistic doctrines. We venture to think a very great advance has been made in the three past years in the relations between capital and labour, the interests of which are in the long run identical. The absence of strikes and the increase in the spirit of conciliation are lasting tributes to the common sense of the Trades Unionists, and the Trades Unions funds are being applied more profitably than in providing strike pay and paying law costs; and, seeing how much is to be gained by a policy of compromise, it is to be regretted that an uncompromising attitude should be that assumed by the representatives at the annual Congress which is so publicly reported.

ON THE PLANNING OF MUNIMENT-ROOMS.

By WALTER H. GODFREY.

THE rapid growth of scientifically-conducted research and the corresponding increase in the value of actual and original documents, have made the preservation of records a matter of the very utmost importance; and this not only in the case of large institutions, or of town and national archives, for many a family and individual collection possesses a value sufficient to warrant the utmost care in the protection of the papers which it holds, as it were, in trust. Now that under the direction of Mr. Douglas Cockerell and Messrs. Hardy & Page, Messrs. W. H. Smith & Son have undertaken the good work of the repair and calendaring of private collections, we may hope that all these really priceless records of days whose oblivion is relieved alone by means of their existence—records which by their very nature are terribly subject to mutilation and decay—will have the full attention bestowed upon them that is their due.

The following notes may be of service in the design of buildings or portions of libraries, etc., devoted to this purpose, and will serve at least to point out the chief features which such buildings should contain. The main considerations are complete ventilation, protection from fire, accessibility of arrangement, and, in large buildings, economy of space.

The thorough ventilation of all documents is now, I believe, generally recognised to be essential. The shelves, therefore, on which they are placed should be quite open, which in itself is a great boon to the searcher, and wherever it is needful to enclose the papers in boxes or cases, these should have an aperture in the side, large enough to admit a free current of air, but kept fairly small to exclude dust. The ventilation of the room should be provided, if possible, by direct cross ventilation, with windows on one side and ventilators in the wall on the other. Movable shutters in the doors answer this purpose very well; and they should be repeated at each stage of the room if it is sub-divided into stories.

The usual precautions being taken of making the building itself fireproof (including fire-resisting doors), our main concern lies with the fittings. The stacks of shelves should be entirely of fireproof material, and nothing can be more convenient for this than lengths of T and L iron, of small section (say 2 in. by 1½ in.), bolted together. The main standards are carried from the floor to within a few inches of the ceiling, and are tied together by horizontal ties at the level of each floor and at the top. They are arranged to suit the required shelving, as shown in Fig. 1, and can easily be placed at any given distance from one another. The standards should be pierced every few inches with holes for the bearers of the shelves, thus making the latter adjustable at will. There is a good pattern of bearers made of two pieces of L iron, of a length equal to the depth of the shelf; one of the two is provided with iron pegs that pass through the holes in the standards and lock it to its fellow on the other side. They are quite easily adjusted (see Fig. 2) and form a very firm support for the shelves. In large establishments where there is pretty frequent need of altering the size and position of stacks of shelves, these iron cases are by far the most satisfactory; for a couple of men can take a large room to pieces in half a day, since the framework is entirely self-supporting and not in any way fixed to the building. Strong wire netting can be used to separate the shelves both lengthwise (Fig. 1, A—B) and between the divisions (C—D). This is quite sufficient to keep the various packets of papers apart, and can be used in any number of sub-divisions,

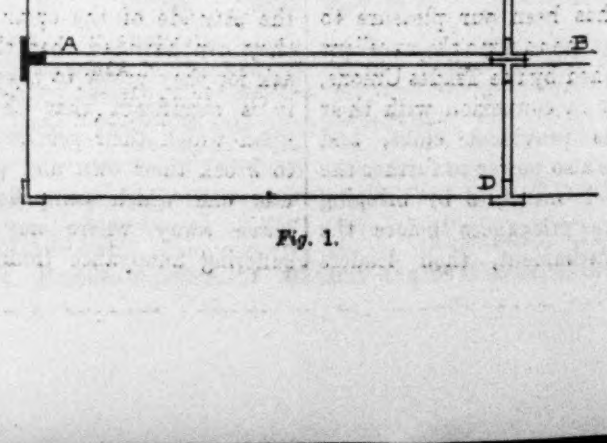


Fig. 1.

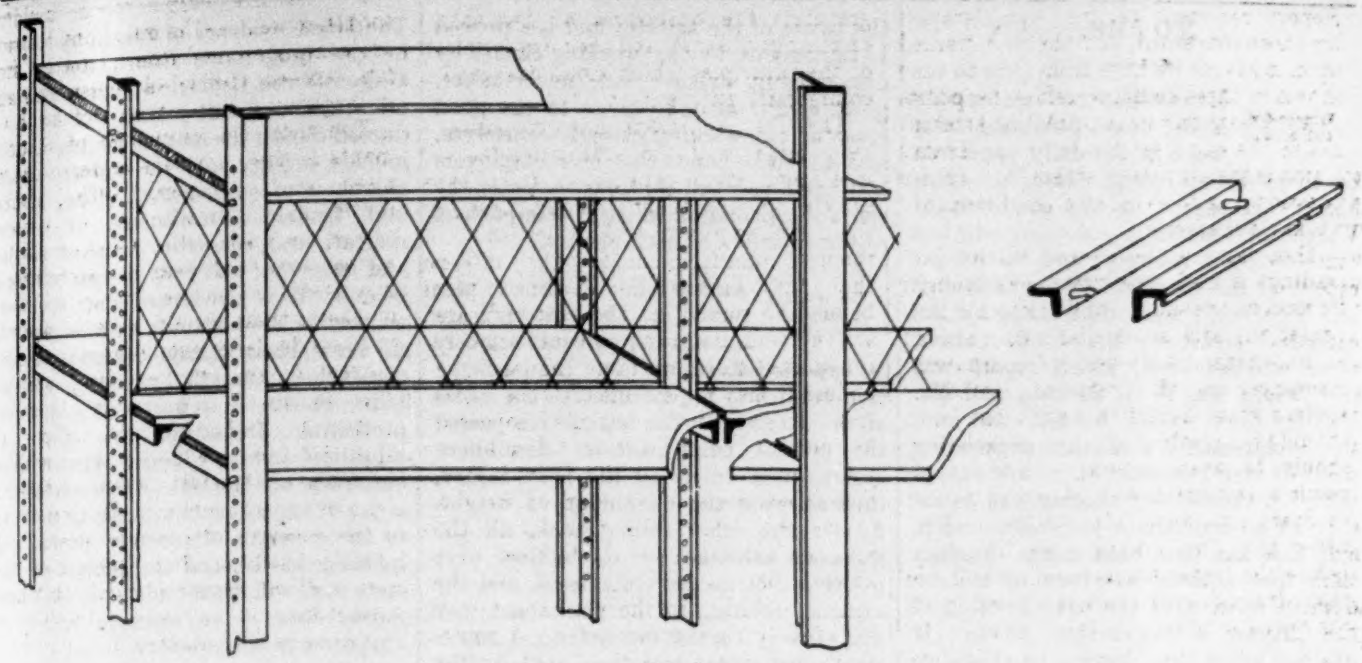


Fig. 2.

since it does not offer any appreciable obstacle to the light.

There is no doubt that the best material for the shelves is slate. It can be obtained in almost any width, is rigid, non-absorbent, impervious to moisture or decay, easily cleaned, and, above all, is proof against fire. Of course it is very heavy, but the iron framework above described will be found of ample strength for its support. It need not be more than ⅜ in. or ½ in. in thickness, and should be quite smooth in surface, having the front edge carefully rounded.

By this means we have a perfectly elastic system of storage, constructed entirely of fireproof material, and quite open to free ventilation. Usage will soon determine the various sizes of shelves most often required, and these can be stacked in readiness. When it is required to fit up a room afresh, or re-adjust the existing fittings, the iron standards are set up in their positions and framed together by the horizontal ties, the wire netting is stretched across, the bearers are slipped into the holes that are ready to receive them, and with the placing thereon of the shelves the whole room is ready for occupation.

To facilitate the accessibility of the documents it is preferable to divide a lofty room into stages of, say, 7 ft. in height, making a floor at each stage of light open ironwork between each stack of shelving; the uprights of the cases being quite strong enough to support the framework of the floor. Connexion can be made by an iron spiral staircase. These floors should be made in movable squares of cast-iron gratings, which, being easily lifted up from their framework, will admit of the passing of bundles of documents, in loading and unloading the shelves. Provision may be made for fixing these, but it will be generally found that their weight is sufficient to keep them in place. It is advisable also to provide a door, at each stage, into the passage (suitably placed directly above the door of the room), so that any large quantity of papers can be hauled up to its proper height; this will also give the opportunity of ensuring more complete ventilation, as mentioned above.

The shelves themselves being of no height greater than 7 ft., are within a man's reach, and no steps are required. Each shelf should be kept as close to the other as may be practicable, both for economy of space and the exclusion of dust, as also to prevent the use of any leverage on the edge of the slate; boxes and papers should be drawn out horizontally to avoid damage, and this is ensured by keeping the shelves close to one another. The bottom shelf ought to be raised 5 in. or 6 in. above the floor; its contents will, then, not be liable to injury from the feet, and will escape the dust better; besides which, in the case of fire, they will not run such serious risk of damage from the water that will be poured into the building.

The stacks of shelves will be, naturally, placed at right angles to the light, so that the windows may look straight down the space between them. Where great economy of space is required, the width of these passages will be regulated in part by the depth of the shelves and of the packets that must be drawn from them. As long as this creates no inconvenience, the distance between the stacks may be as small as 3 ft., or even slightly less. A good passage-way should be left on the window-side of the room, along which, beneath the windows, it is convenient to place a long counter or table at each story, for the purpose of examining parcels and identifying documents; between the windows, too, a few shelves may be fixed for the temporary placing of unclassified bundles, or packets to which a borrowed paper has not yet been returned—a system that considerably decreases the possibility of the loss or mislaying of records. The index to each set of shelves is hung to most advantage at the end opposite the light.

If the record-room itself is to be used for research work, and is not merely a place of storage (as, for instance, when it forms the part of a private library), it may be furnished with a deep recess or bay window, divided from the main room by an arch, which can be fitted and furnished as a small study. On the other hand, if the muniment-rooms are not large, and are merely an adjunct to the main hall or room of a library, the documents themselves may be stored in convenient recesses, which should be built as safes, and provided with sliding fireproof doors, quickly to isolate them from the accidental outbreak of fire.

But these are rather considerations of general planning, which it is scarcely my purpose to enter into here. It is for this reason that the above notes have been limited to a consideration of a muniment-room, in itself; the disposition and general plan of a building being so entirely dependent on special requirements and circumstances. But whether the storage-rooms are ranged around a central reading-room, or occupy a separate wing of the building to themselves, as long as they are kept cool and well-ventilated, the only serious consideration is the prevention of fire. But this is only too serious, where a loss, having once happened, is quite irremediable, and therefore no precautions can be too great. Electric-light should be admitted only in steel conduits, and its position should be carefully studied; but where all but the papers themselves are uninflammable, it should be possible, with some thought, to reduce the risk to its extreme minimum.

ELEMENTARY SCHOOL, ROMSEY TOWN.—A new public elementary school was opened in Romsey Town on the 4th inst. The building comprises a central hall, with eight classrooms, opening off direct. Six of these are to accommodate fifty scholars each and the remaining two sixty. There are also cloakrooms and lavatories and storerooms, with a private room for the headmaster. The heating is by means of hot water. Outside, the playground is arranged in two sections, that on the north side being for girls and that on the south or farther side for boys. The yards are paved with asphalt, and contain out offices, shelters, and seating accommodation. The exterior is of red brick with white stone facings, and overlooking Mill-road is the bell tower, below which is a reproduction in stone of the borough coat of arms. On the north and south sides the school is bounded by walls and on the east and west sides by iron railings. The whole area occupied is some 3,000 sq. yds. Accommodation is provided for 420 children, and the cost will amount to about 7,000*l*. The architects were Messrs. Gooday & Cressall, of Colchester, and the contractors were Messrs. Clark & Son, of Cambridge.

NOTES.

Winchester Cathedral.

EXAGGERATED statements have been published this week in the daily papers as to there being recent cause for fresh anxiety in regard to the condition of Winchester Cathedral. Nothing new has come to light recently, and no official report on the condition of the cathedral has been made since that made by the cathedral architect, Mr. J. B. Colson, some months back, which report was laid before Mr. T. G. Jackson and Mr. Fox for their opinion on the case from the architectural and the engineering point of view respectively. They agreed with Mr. Colson that shoring was necessary as an immediate preliminary step, and this has now been done. Further than that nothing has been or will be decided upon until the next meeting of the Chapter in two or three weeks. It has for years been known to those responsible for the fabric that the state of the east end of the cathedral would eventually necessitate special measures being taken for its security, and nothing new has come to light recently. The terms of the interim report seem to have been made the basis for sensational paragraphs in some of the daily papers which, we understand, are not warranted by the facts.

Wages and Strikes.

THE annual report of the Labour Department of the Board of Trade on wages and hours of labour shows the continued decline in wages during the year 1904 that would be anticipated in a time of depression, the mining industries, steel manufacture, shipbuilding, bottle making, and building trades being those principally affected. The building trade, it is stated, showed a net fall for the first time since 1893. The number of workpeople whose change in wages resulted in net decreases was, however, smaller than in the two years preceding. As we read the figures, however, the rate of wages in the aggregate still shows a net increase over the whole period during which the statistics were available, viz., from 1895. In the year under review, 1904, the coal miners represent 82 per cent. of those affected, as compared with 84 per cent. in 1903 and 83 per cent. in 1902. 16,018 workpeople had their hours of labour reduced, and 11,000 out of the 16,792 workpeople whose hours of labour were altered were engaged in the building trade. It is satisfactory, however, to note that for the first six months of the current year the reduction in wages is less than for the first six months of 1904. In our issue for August 12 we were able to show from the annual report of the Board of Trade on strikes and lockouts that 1904 was a record year for the small number of stoppages in industrial undertakings, and it is greatly to the credit of the working classes that this should be the case in view of the figures showing the above reduction in wages. Times of commercial depression used to be those marked by an increase in the number of strikes, and it seemed hopeless to inculcate the knowledge of the commercial unsoundness of such a policy. The alteration in the law made by the decision in the Taff Vale case in 1901 has lessened the power of the agitator and has proved advantageous to the working classes by discouraging strikes; but, nevertheless, great credit must be given to the good sense of the working classes themselves, and it is to be hoped that both employers and employed will continue to foster the spirit of conciliation which is so important to the interests of both parties.

The Witham Railway Disaster.

AFTER the evidence presented at the coroner's inquest, the jury could scarcely be expected to return more than a negative verdict so far as concerns the cause of the accident. The locomotive passed the critical point without derailment and without receiving the least injury, thus showing the advantage of weight. As for the other rolling-stock, all the witnesses examined on the subject were positive that no defects existed, and the evidence relating to the permanent way was of very similar character. A somewhat suggestive expression used by the guard in the carriage next to the engine does not appear to have attracted any particular attention. His words were to the effect that just before the train passed the bridge at the entrance to the station a jerk occurred which was "much more than usual." There is evidence here that previous shocks had regularly taken place at Witham, a fact that is corroborated by a letter written by a passenger well acquainted with the line. We have no doubt that the point will not escape the attention of Colonel Von Donop, who is now considering the circumstances on behalf of the Board of Trade. In the absence of any defect in the vehicles and of accidental obstructions on the line, the natural inference is that the permanent way was not suitable for high-speed traffic. The report of the Board of Trade inspector may throw some light upon this aspect of the disaster.

British Canals.

IN a letter to the *Times* the suggestion is made that the chief trunk canals of this country should be converted into roads for fast motor traffic, the idea being that this would help to diminish the dust nuisance, the number of accidents, and the dislike entertained to the fast motor on existing main roads. We do not for a moment believe that it would do anything of the kind. No doubt plenty of cars would patronise the new highways and their owners would willingly pay any reasonable tolls necessary to provide return for the capital involved, but as more cars are put on the roads year by year, no reduction could be expected in the number using ordinary highways which, after all, are desirable for pleasure trips and indispensable for a large proportion of business journeys. Moreover, we cannot afford to give up the great possibilities of the canal system as an auxiliary means of transport. The amalgamation and co-ordination of British inland waterways for the purpose of through navigation is clearly the only permissible solution of the canal problem.

Government Cement and Concrete Tests.

IN the matter of inquiring into the properties of structural materials the Americans are far more advanced than our own authorities and scientific institutions. The latest evidence of this is to be seen in the programme drawn up by the United States Geological Survey Department. The investigations to be conducted during the ensuing twelve months include inquiry into the properties and character of sand, gravel, stone, cinder, and kindred constituents of cement mortar, and concrete; tests of mortar and concrete; and tests of concrete-steel beams. It is announced that the tests on mortar and concrete will be directed to show their tensile compressive and transverse strength, porosity, permeability, resistance to heat and cold, metal protecting properties, the effects of vibration, and the adhesion between these materials and metal. A comprehensive series of experiments will also be made as to the strength of concrete beams and building blocks, and the subject of concrete steel will receive adequate attention. Surely here is an example worthy of imitation in this country.

The Victoria Falls Bridge.

BY the opening of the cantilever bridge over the Zambesi River an important link has been completed in the railway connexion between Egypt and the Cape. Additional interest was imparted to the inauguration by the fact that the ceremony took place on the anniversary of the occupation of Mashonaland, and was conducted by the President of the British Association. Those who were present could not fail to be reminded of the great pioneer to whom the English people owe the inception of the Cape to Cairo Railway, and of the increasing association of abstract and applied science. When Erasmus Darwin in 1785 wrote the prophetic lines—

"Soon shall they arm unconquered steam afar,
Urge the slow barge and draw the flying car."

he could little have foreseen that his great-grandson would open a railway bridge in the heart of Equatorial Africa. The bridge itself crosses the river at a height of 400 ft. above water level by a single span of 600 ft., and ranks as one of the most remarkable structures of its class in the world.

The Calcutta Improvement Scheme.

THOSE of our readers who are familiar with the crowded condition of Oriental cities will not be surprised at the statements that in one division of Calcutta the density of population is at the rate of nearly 150,000 persons to the square mile, and that in the northern wards of the city 80 per cent. of the total available space is covered by buildings. After discussions extending over several years, a scheme of city improvements has been prepared by a joint committee representing the Imperial and local authorities, the ratepayers, and the mercantile classes. The chief proposals embodied in this scheme are the construction of main avenues, north to south and east to west, with diagonal connecting roads; the improvement of existing thoroughfares; the provision of open spaces in parts where more than one-third of the area is covered by buildings; and the formation of new quarters in accordance with suitable building regulations. Further, it is suggested that the execution of the project should be relegated to a central authority, comprising six members and a president. From this brief summary

it will be seen that the measures recommended for the improvement of Calcutta are not unlike some of those proposed by the Royal Commission on London Traffic. Another feature of resemblance may be found in the fact that the chief difficulty attending the realisation of the scheme is that of finance.

The Burial Ground, Christ Hospital Site. In excavating the ground for the new buildings of St. Bartholomew's Hospital was disturbed a few days ago a burial-ground which formerly belonged to Grey Friars, since Christ Church, in Newgate-street. It was found that from seventy to eighty separate interments had been made in a small space abutting against the wall on the south side of the property of St. Bartholomew's Hospital, and extending to beneath the swimming-bath of Christ's Hospital. The burial-ground may be identified by a reference to a valuable set of plans which belonged to the Stowe Collection and were afterwards acquired by Frederick Crace. They consist of old hand-drawn copies of nine drawings and surveys, made in or about 1540, of the precincts of the Franciscans' Church, the adjoining property of St. Bartholomew's Hospital, and some parts adjacent. The plans delineate the now forgotten foot-thoroughfare (closed to the public in 1818) which extended from the Stone Gate, nearly opposite Warwick-lane, in Newgate-street, along the side of the West Cloister of Grey Friars, and so to a postern-gate in the City Wall, and thence by "The Walke" to St. Bartholomew's Hospital outside the Town-ditch. In one drawing of the Grey Friars precincts are plotted two "churchyardes" at the angles of the Walk and the postern, the one to the west as "belonging to Christ Church," and the other to the east as "the churchyarde to Christ Hospitall"; the two burial-grounds lying on either side of the foot-passage just beyond the Wall and at the ditch. On the south-western side of the walk is plotted "churchyarde for the poore of the Hospitale"—that is, of St. Bartholomew. Another drawing depicts the brew-house of St. Bartholomew's, adjoining the Stone Gate in Newgate-street, and, within the angle of the City Wall, the bakehouse and mill-house yard, the brew-house court, and Little Cloister in the area, seen through the railings from Newgate-street, called "Hall play" by the Blue Coat boys, who mustered there for the last time on April 18, 1902. Their remoter play-ground, to the north-east, they called "the Ditch"; a doorway, near the swimming-bath, giving access to St. Bartholomew's Hospital replaced the postern-gate in the City Wall.

The Photographic Salon. The thirteenth annual exhibition of the Photographic Salon, now open at the rooms of the Society of Painters in Water-colours, is of the usual character, containing a certain proportion of photographs, portraits and other subjects, which claim recognition simply for clearness of delineation, and a considerably larger proportion which aim at a special artistic effect. M. W. Cadby's studies of children, in a delicate kind of half tint, are very pleasing and quite in a category apart from the ordinary portrait photograph. In "The Barrel" (4) Mr. A. Cochrane has succeeded in making a picture of the Dutch School in regard to subject and lighting; his "Mont St. Michel" (12) is a print on rough paper simulating the texture of a water-colour. Herr Kühn has suceeded in arranging a real picture in "Tuder Düne," showing two or three peasant women walking in file over the dunes. Mr. Benington gets a very soft aerial effect in "Surrey Woods" (20). Among other good landscape effects are that by Dr. Boon (38), with the trees showing strong in the foreground against a faint landscape behind; Mr. Hinton's large photograph "Hill-top" (52) with the sky light over the shoulder of the hill—very effective; and Mr. Arthur Marshall's "The Frontier" (209), a subject admirably selected to make a composition. There are several not unsuccessful attempts at poetic subjects expressed by nude figures, such as Mr. Steichen's "In Memoriam" (130) and Messrs. Liebreich and Stewart's "Peccavi" (253), a nude figure in a disconsolate attitude on the floor of a dismal room; the figure is very well posed in reference to lines of composition. There are two or three figure photographs in red, imitating (not unsuccessfully) the effect of drawings in "sanguine"; and M. Dubreuil's "Frise pour chambre d'enfants" (111), where two children are photographed as the centre point of a row of conventional trees (which must be photographed from drawings), is pretty. Architecture, as usual, receives far less attention than it deserves; but Mr. F. H. Evans shows two good little interiors in Wells and Ely (45, 46), and Mr. Somerford one "Through a Norman Arch" (198).

The Institute Annual Dinner. We may remind our readers who are members of the Institute of Architects, that the Annual Dinner of the Institute is this year to take place at Newcastle-on-Tyne, on October 13. The Northern Architectural Association, whose head-quarters are at Newcastle-on-Tyne, are exerting themselves to render the visit an agreeable one. On October 12 the President will receive the R.I.B.A. visitors at an "At Home" in the evening. On October 13 a river excursion, concluding with a visit to Tynemouth Priory, has been arranged for the morning, and the Association will invite the visitors to luncheon, at 1.30 p.m., at the Barras Bridge Assembly Rooms. On the afternoon of October 13 the Castle and Black Gate will be visited (under the guidance of Mr. J. Oliver Heslop, M.A., F.S.A.), also the Cathedral, the Guildhall, Trinity House, All Saints' Church, and the Laing Art Gallery, after which it is hoped arrangements will be able to be made for afternoon tea at the Association Premises. The dinner will take place on the same day at 8 p.m., at the Old Assembly Rooms, Newcastle; and on October 14 visits have been arranged to Durham Cathedral, etc., under the guidance of Mr. C. Hodgson Fowler, and to Hexham Abbey, etc., under the guidance of Mr. C. C. Hodges: Under these circumstances the visit ought to be a very interesting one, and it is to be hoped that it will be well attended.

COMPETITION FOR THE TECHNICAL INSTITUTE, ROCHESTER.

Who is responsible for the delay in declaring the result of this competition we do not know, but it is certainly strange that the competitors have had to wait more than three months for the announcement of the result of a competition for a building, the estimated cost of which is only 8,000*l*. It is true that one hundred and thirty-one designs were submitted, but, as probably not more than the odd thirty-one merited more than two minutes' consideration, the number cannot have added materially to the labours of either the assessor or the committee.

The instructions to architects were clearly drawn, and were not modified in any important respect (save one) by the answers to competitors' questions. The one exception was in the number of stories, which in the instructions was definitely stated to be three, but was afterwards altered to two or three. The accommodation required was not of a complex nature, consisting simply of two departments—an art school of ten rooms and a science school of seven rooms, with the necessary cloak-rooms and lavatories, bicycle store, and heating chamber. Provision had to be made for future extensions, but even this was not sufficient to render the problem of planning as difficult as many of the competitors appear to have found it. Nor can any particular fault be found in the site, which is an almost exact rectangle, measuring about 170 ft. by 82 ft., and very nearly level. The principal front is towards a private street on the north, and a new street will also be formed along the east end; there is no right of light over the south side, and competitors were instructed to set the building back 10 ft. from the west boundary. A comparatively simple problem like this ought not to have been the occasion of so many designs below mediocrity.

One other point deserves mention. Competitors were asked to design the new building so that it will "harmonise in appearance" with the neighbouring museum (Eastgate House), "which is a building of the Elizabethan Period (1591)." Some of the competitors appear to have had somewhat hazy notions of the characteristics of buildings of Elizabeth's time, or to have thought that anything would harmonise with such a transition style.

Messrs. Russell & Cooper (London), the authors of the first premiated design (No. 72), have designed an extremely simple and symmetrical plan. The entrance is in the middle of the north front, and leads through the entrance hall (16 ft. wide) to the principal staircase on the south side or rear of the building. These form the transverse axis, and at right angles to this central line is the main corridor (8 ft. wide). To the left and right respectively of the entrance hall the secretary's and porter's rooms are placed, with separate store-room for each, and beyond these are the woodwork-room on the left and the cookery-room on the right; the cloak-rooms, etc., are grouped around the three outer sides of the principal stairs. Future extensions (four classrooms on each floor) are shown at the two ends of the building, the longitudinal corridor being produced for the purpose, so that this corridor is lighted from the ends as well as from the principal staircase in the middle and from the south side between the staircase wing and the two future extensions. The plan of the completed building will be shaped like the letter π, the straight side forming the principal front. On the first floor the lecture-room is placed in the middle of this front, with a classroom at each end separated from it by folding screens. Behind the longitudinal corridor the two rooms for the masters are placed, with separate store-rooms, lavatories, and water-closets, the two groups being placed one on each side of the principal staircase. On the second floor the elementary art-room is placed over the lecture room, and the life-room and antique-room over the two classrooms, folding screens being again adopted between the three rooms. The four remaining art-rooms are shown over the two groups of masters' rooms. It is questionable whether the room for the headmaster of the art school is in the best position, and also whether a folding screen between the life-room and the elementary art-room is suitable; the depth of the classrooms (30 ft.

from the window wall) is also excessive, but the simplicity of the general arrangements counterbalances a number of small defects. The elevations are of a heavier and later type than that suggested in the instructions, and are not as satisfactory as the plans.

The second premiated design (No. 74) is by Messrs. Crouch, Butler, & Savage (Birmingham), and provides all the accommodation on two floors. Here, again, the completed building would be **w**-shaped, but on the ground floor the whole of the plan is occupied by the first portion of the building with the exception of the right rear wing; on the first floor the two wings are left for future extension. The entrance is in the middle of the front, and leads through a vestibule and hall to the principal staircase in the rear; at right angles to these there is the longitudinal corridor (7 ft. wide), with a secondary staircase and entrance at the east end. To the left of the main entrance there are the headmaster's room and two class-rooms, and to the right the secretary's room, and woodwork and cookery rooms. The cloak-rooms, etc., adjoin the principal staircase, and are of one low story, windows being formed in the wall of the longitudinal corridor over the flat roofs. The lecture-room forms the left rear wing of the building, and is therefore near the two science classrooms. On the first floor the elementary art-room is in the middle of the front, with the life and antique rooms to the left, and the shading, modelling, and wood-carving to the right. The metal-room is in the roof over the wood-carving room, and is only 6 ft. high at the sides. The design of the principal front is a pleasing piece of work, Elizabethan in style, and more in accordance with the instructions than the accepted design.

No. 45, by Mr. W. H. Knowles (Newcastle-on-Tyne), has gained the third premium. The central portion of the building is three-storied, three of the art classrooms being placed on the second floor; the remaining accommodation is provided on the ground and first floors, and on a small mezzanine floor over the cloak-rooms. The lecture-room is on the ground floor at the east end of the building, and the two classrooms on the first floor at the west end. The planning is simple and compact, and the building appears to be inexpensive, but the design is certainly inferior to those placed before it by the assessor.

The unsuccessful designs are hung in numerical order, and it will be interesting to consider a batch of them in some detail, so that an approximate idea of the general quality of the designs may be obtained. It must be confessed that the survey is disappointing.

In design No. 1 there is only one staircase, and the side flights are only 4 ft. wide, although the instructions clearly call for two staircases—principal and secondary. No. 2 is the work of a beginner. No. 3 is interesting for its picturesque external treatment in brick and stone, with half-timber gables, the style harmonising more closely with that of Eastgate House than does the style adopted by most of the competitors; the plan, however, is of much less merit. The plan of No. 4 is decidedly above the average, and is well adapted for future extension, but more space might with advantage have been given to the staircases, and the separation of the cloak-rooms and lavatories into eight rooms (two on each of four floors) is not convenient. There is no redeeming feature in the next design, but No. 6 has a simple and attractive plan, marred by a dark and rather narrow corridor on the ground floor, and by the quite inadequate cloak-room accommodation. In No. 7 the secondary staircase is provided to comply with the instructions, but it serves no useful purpose whatever, as on each of the three floors it has no direct communication with the principal rooms and corridors; the only means of communication lies through the men's lavatories and cloak-rooms; the plans are also badly adapted for future extension. The author of No. 8 has produced an excellent elevation in the Elizabethan style, and, although the plan is also meritorious, it is clear that it has suffered from the author's love of his external design; thus, the top-lights of the five art-rooms are shown on the south slope of the roof, although the north slope was available, but the principal front is towards the north, and top-lights would not have improved it. The plans of No. 9 are convenient and adapted for future extension, but the lecture-room is only 45 ft. by 25 ft., instead of 50 ft. by 30 ft., and the elementary art-room and some of the other rooms are also too small; the exterior is somewhat peculiar, but not ineffective.

We will say nothing about Nos. 10 and 11. No. 12 is much better, but the ground-floor corridors are too narrow (particularly in view of the future extensions), and the lecture-room and class-rooms would have been better on the same floor. Design No. 13 is shown by a very careful and complete set of drawings, and the plan is decidedly good in its main lines; the cloak-rooms, however, are planned in such a way as to block the wall-spaces which would otherwise have been available for lighting the corridors, and the secondary staircase is too narrow; the raising of the ground floor about 4 ft. above the street adds unnecessarily to the cost. No. 15 is better in elevation than in plan. Nos. 14 and 16 are bad in both respects. In No. 17 the cloak-rooms are entirely inadequate, and the corridors are not well arranged. No. 18 is feeble. No. 19 could not be extended without much difficulty and inconvenience. No. 20 has a simple plan, but the cloak-rooms are too small, and the class-rooms are not on the same floor as the lecture-room; the numerous steps in the corridors are also a defect. No. 21 is put out of court by the defective grouping of the rooms in the two departments; thus, the elementary art-room, wood-carving and metal-work rooms are on the ground floor, the shading-room on the first, and the other art rooms on the second floor. No. 22 suffers from the same defect, but not so seriously, and in No. 23 we find the lecture-hall on the ground floor and the two class-rooms on the second, the art school being, however, conveniently grouped on the first floor, but without much consideration for the direction of the light. In No. 24 future extension would be difficult, and neither the plans nor the elevations show any feeling for architectural effect. The plan of No. 25 is not without merit in its main lines, but is defective in detail. No. 26 is a well-drawn set, with picturesque elevations and plans of more than average merit, but lacking in directness and simplicity. The plan of No. 27 betrays too much ingenuity; the staircases are badly placed in relation to the principal entrance. We cannot say anything good about the next design, but No. 29 is well worthy of notice both as regards plan and elevation, but, unfortunately, nearly all the rooms are too small, some being nearly one-third less than the stipulated areas. The plan of No. 30 is on the whole well arranged, but might easily have been improved in detail. No. 31 has rather too narrow stairs and corridors, but is meritorious both in plan and elevation. In the next design there is a basement under the greater part of the building, and the cloak-rooms and bicycle stores are placed in it; all the other accommodation is conveniently arranged on two upper floors, the science department on the ground floor, and the art department on the first; this is a good design, but, unfortunately, the future extension as shown would have no communication with the first portion of the building; the elevations are picturesque and at the same time symmetrical, the upper story being in half-timber work. No. 33 is also above the average, the future extension being carefully considered. Nos. 34, 35, and 36 betray the 'prentice hand, but No. 37 is an able design both as to plans and elevations, and shows an intimate knowledge of the requirements for a building of this kind; the departments are well grouped, but the plans are somewhat lacking in directness; the secondary staircase is too small, and the narrow passages on both floors detract from the merit of an otherwise good plan. No. 38 is also above the average both in plan and elevation.

It is unnecessary to describe all the other designs in detail. Many of them are obviously too expensive, and the defects which have already been mentioned appear again and again, such as undue complexity of plan, insufficient lighting of corridors, faulty arrangement of the rooms in the two departments, and inadequate cloak-room accommodation. As regards the last, No. 62 goes to the other extreme, and provides thirty-eight water-closets for the use of students, in addition to twenty-four urinals and forty-six lavatory basins. Some of the designs are worthy of more particular notice, as, for example, the plans of Nos. 42, 49, 55, 56, 61, 64, 66, 67, 69, 78, 86, 89, 95, 103, 107, 109, 112, 113, 114, 115, and 129, and the elevations of Nos. 54, 66, and others.

No. 63 is a clever piece of planning of a monumental type, with the entrance in the middle of the principal front, leading to a circular hall, from which the longitudinal corridor branches off to the right and left; the staircases, however, are not well planned, and the future extension is small, and will interfere somewhat with the lighting of the corridors. The science department is planned entirely on the ground floor, and the art department on the first floor. The design, as regards both plan and elevation, is an able piece of work, and must have been "in the running." No. 75 is another able design, which would be even more seriously affected by the future extensions; if the first portion only of the building had to be taken into consideration this would be regarded as one of the best designs submitted, the principal defects being in the lighting of the ground-floor corridor and the narrowness of the staircases. The plans and elevations of No. 83 are also well above the average, but the plans would have been greatly improved by transposing the staircases and cloak-rooms, so that some direct light would have been obtained at the ends of the large corridor, or hall, on the ground floor; even better results would have been obtained by placing the lecture-room with one *end* towards the hall, instead of one *side*.

The designs will be on view in the Corn Exchange, Rochester, until Monday next, between the hours of ten and five. One hundred and thirty-one designs for a building to cost 8,000*l.*! The pity of it! The constable in charge at the time of our visit was of an inquiring turn of mind. "What," he asked, "are all those drawings worth? People ask me, and I should like to know." He whistled in surprise when he was told that he might calculate the *cost* in principals' time and assistants' wages at 20*l.* or 25*l.* a set.

MAGAZINES AND REVIEWS.

In the *Art Journal* Mr. Howard Ince writes an article on "Aerial Architecture," referring thereby to such word-paintings of imaginary architecture as have been made by poets or imaginative writers. All the principal passages of the kind occurring in English poets have been quoted in the series of articles on "Architecture Among the Poets," published a good many years ago in this journal, and since republished by Messrs. Batsford in book form and under the name of the author (the present editor). Mr. Ince, however, without going beyond English, goes into translations, at least from one foreign poet, Dante, from whom he takes one or two descriptions, especially that of the City of Dis. This scarcely comes under the title "aerial architecture," unless we are to take the expression as equivalent to architecture which exists only in the fancy. Of this infernal architecture of Dante's vision, one of the most striking points of which is that it looked as if built of iron, Mr. A. Goodwin has made a remarkable and successful version in painting, to which Dante's detailed and materialised description lends itself rather well. In the case of many of these poetic descriptions of architecture the vision is apt to evade the grasp of the painter who endeavours to materialise it; an impression of glory and grandeur which can be conveyed to the mind vaguely by poetic description or imagery, does not leave enough distinction of fact for the painter to grasp, or will not bear reducing to actual delineation in form. This is rather the case with Milton's description of the gate of Heaven, as seen by Satan on his journey to earth. The poetic description fills the mind with a vague image of a sublime effect of celestial architecture. Mr. Ince has made a courageous attempt to illustrate this in a line drawing occupying a whole page; we like him for making the attempt, and there are fine points in it; but line-drawing is too precise and materialised a method for

attempting to express this kind of spiritual architecture; the details are obliged to be shown by definitely lined forms which inevitably show too much of the reminiscence of earthly architecture. It would be more possible to give some kind of translation of Milton's imagery in brush-work, in which one could have a broader and vaguer effect and could evade detail which is apt to become prosaic. For if we have got to show the detail of a celestial architecture we can only do it by reminiscences of terrestrial architecture; we cannot invent details for our celestial architecture save out of the memory of what we know. Mr. Ince's criticism on Milton's description of the effect on the opening of Hell Gate, in which he says it—

"Cast forth redounding smoke and ruddy flame,"

is too mechanical and logical. He says Milton ought to have remembered how heat draws in a current of air; but he forgets that chaos was not atmosphere, except where there were rushing storms of matter; it was, as the poet says further on, "a vast vacuity." Scientifically, Milton is quite right.

In the *Burlington Magazine* Mr. J. C. Holmes writes an article on "Turner's Theory of Colour." It might perhaps be better termed "Turner's practice," for we doubt if Turner theorised much. Mr. Holmes's point is that a colour may appear inharmonious—a shadow colour especially, which is added in such a manner as to produce the appearance of relief, but may be harmonious in effect if the whole is treated in flat manner; when a thing such as a foliage wall-paper pattern is treated so as to simulate relief, we compare it with the actual colour of nature in similar creations, and are shocked by combinations of colour which appear un-natural; but if the whole is flat and conventional no such comparison is suggested. The application of this is that Turner in his later and more highly-coloured paintings had, comparatively at all events, given up the attempt at realism in simulating relief, and laid on colour simply as colour, with no attempt at realism of effect. There may be something in this, as an explanation or justification after the fact, though we doubt if it was an intentional principle on Turner's part; an artistic instinct it might no doubt be. Mr. Laurence Weaver concludes in this issue his illustrated notes on "English Architectural Leadwork." We entirely agree in his lamentation over the barbarism, occasionally met with, of painting it. Dr. Martin's "The Life of a Dutch Artist in the XVIIth Century," dealing chiefly in this number with the work of pupils in the master's atelier, is interesting, and tends to show, on the basis partly of quotations from Karel van Mander's biography of Jan van Scorel, how much the Dutch painters' art was a craft, to be learned, like other crafts, according to a system of technical process. There are in fact, in modern times, not a few painters whose work is a craft rather than an art—only they are not aware of it.

Neither the *Architektonische Rundschau* nor the *Berliner Architekturwelt* present anything special for comment this month. The *Architekturwelt* is largely occupied with interiors and their furniture, some of it eccentric, some of it simple and good. The best thing among the illustrations is an iron angle stove for a summer villa at Marienfelde, the subject of several illustrations. The house itself is eccentric and unpleasing in design and detail, but the stove is both original and artistic.

The *Architectural Record* (New York) deals with a good many interesting subjects. The first article is on "A New Series of Stage Settings for 'Romeo and Juliet,'" designed by an architect, Mr. F. Chouteau Brown. A good many illustrations of the scenes are given, on a small scale, and also some photographs of old street scenes in Viterbo, San Gimignano, etc., which are supposed to have been taken as the basis for the scenes designed for the play. We do not, however, see in these so much of the influence of the actual examples as we should have expected from their being designed by an architect who was apparently undertaking to get historical truthfulness. Stage architecture is always theatrical; even architects who take it up seem to be bitten by the stage tendency to what in a double sense may be called a theatrical character in architecture. We are never allowed to have a simple bit of real architecture. We remember, in Messrs. Gilbert and Sullivan's opera "Haddon Hall," the elaborate production of an open timber-roofed ball-room which was not only unlike anything in Haddon Hall, but anything possible in English architecture at all. It would have been so easy, and (one would have thought) so much more satisfactory, to have copied the actual ball-room at Haddon; but for your scene-painter that would be far too simple and obvious a proceeding. When we pointed out, some years ago, that the scenes in the interior of Canterbury Cathedral painted for the production of Tennyson's "Beckett," contained unrealities and anachronisms, the reply both of scene-painters and theatre critics was that architectural accuracy on the stage was of no consequence. We should have thought that it gave more reality to the scene; but apparently reality is not what is wanted. From Mr. Chouteau Brown's testimony it would appear that the same prejudice exists in the theatrical world in the States:—

"That there exist to-day certain prejudices against the architect as a scenic designer among even the best theatrical managers is apparent from a previous personal experience of my own. Some six years ago, when work was just commencing on a certain important production, I called on Mr. Daniel Frohman, the producing manager, to suggest the possible advantages of having the Colonial and Georgian architectural settings reproduce, with more fidelity than the scenic studio would ordinarily compass, the actual local surroundings of this early period in our development and history. He proved to be most approachable, but when it developed in the course of the conversation that his caller was an architect, it immediately became apparent that he had no inclination to further discuss the matter with anyone belonging to that profession.

From the impression obtained at that time it appeared that previous experience had quite convinced him that such gentlemen were, as a class, too narrow and assured in their point of view, as well as too impracticable and expensive in their designs, to make it worth his while to undertake any additional bother for what was—so far as any direct financial return or artistic appreciation from an audience could be counted upon—a comparatively unimportant detail. And this represents the position taken by one of the most enlightened, intelligent, and probably least commercial among our theatrical producers."

Accordingly the writer was agreeably surprised on being asked by a manager to work up a series of designs for the stage setting of "Romeo and Juliet." Yet he seems, as we said, to have been bitten by the mania for theatricalising stage architecture, and none of his street or garden scenes or interiors could be taken for a representation of an actual place. As to the interiors, that is partly due to the want of scale from the fact of the whole stage being used alike whether for palace or cottage. Friar Laurence's cell, for instance, is the interior of a big Gothic warehouse; and "The inside of the Capulet's tomb" suggests a place four times the size of the exterior of the same tomb shown in a previous scene. The article on "A Novel College Chapter-House" illustrates a really original architectural treatment arising out of a special condition of site. The building is the Chapter-House of the Alpha-Delta-Phi fraternity at Cornell University; it is situated on a point of land jutting out over the valley, which is 350 ft. below, and there is apparently a great difference of level on the site itself. The building is on the plan of an inverted ⊥, the shank, however, expanding at the end into a polygon which forms the dining-room. But the remarkable point is the Lodge, which stands at a distance from the cross block but on the axis of the building, and at the very edge, apparently (from the view) of the hill; it is connected with the main building by an underground passage, and is treated on an in-and-out star plan which makes it look like a bit of a Vauban fortification with a dome over it. The appearance of this group is very striking and original. "Some California Bungalows" are illustrated in another article; some of them show a very happy combination of picturesqueness and simplicity. And then we have an article on "The American Pantry," which in its simpler form does not seem to differ much from the English pantry; but pantrys of three degrees of comparison are illustrated, and the pantry of the third or superlative degree is palatial; it is stated to have been planned by a lady inspired by the contemplation of some ruins of a Roman residence during a visit to Europe. It is 20 ft. long, with an arched ceiling, a marble floor, an electrically heated closet to keep plates and dishes warm, and two electric lifts from the kitchen.

"Built in the wall at the rear is a large, well-lighted silver room. Burglars feel discouraged when they consider the many clever contrivances for rendering its valuable contents absolutely secure. The thick iron door, swinging heavily on its hinges, concealed in the panelling when closed, is the only sign of the safeguards employed. Inside rows of wide, shallow drawers, white like the rest of this immaculate place, hold dozens of forks, spoons, etc., arranged with exquisite regularity on soft white mats. Heavy pieces of plate, removed at night from the sideboard, are placed each in its own particular niche in this great safe.

The wide counter-shelf and the table running down the centre of the room are of marble, the three sinks of porcelain. No woodwork shows anywhere, even the dressers being fitted up with plate glass doors set in narrow nickel-plated frames."

It must, however, be difficult to live up to such a pantry as that.

In *Public Works*, Mr. G. Henry Kinahan, M.R.I.A., discusses the effects of "Tidal Currents and Wind Waves" with reference to the destruction of cliffs, the shifting of shoals, and the filling up of estuaries and harbours. The article is a very thoughtful one, and deserves special attention for the reason that it deals largely with forces that are sometimes forgotten because they are silent and undemonstrative. Among the most important of such forces are the deep-sea currents about which little is yet known, except that they frequently cause erosion, commencing in deep water at the outer edge of frail materials, and slowly but surely sap the foundations of cliffs and coast-protection works of all kinds. Mr. Kinahan's illustrations are chiefly drawn from Ireland, but this in no way detracts from the merits of his able contribution. The subject of coast protection is also treated by Mr. Gerald O. Case, who describes the system of groyning invented by his father, the late Mr. E. Case, and refers to its later developments. The method in question has been described on several previous occasions, but the present article is well worth reading, and the photographic views with which it is illustrated are interesting as showing the remarkable results achieved at different seaside places. "Steel-Frame Building Construction," by Mr. B. H. Thwaite, is a contribution which architects may read with advantage, although they cannot be expected to share the enthusiasm of the author for lofty buildings of this class. We fully admit the advantages of steel as a structural material, and its perfect safety when adequately protected from the effects of fire and corrosion. But height is by no means a necessary accompaniment of steel-frame construction, and those who desire to popularise the system in this country would do well if they paid less attention to panegyric comments on American monstrosities in the way of building design. Among the remaining articles we may specially mention that upon "The Advantages of Pneumatic Tools," by Mr. F. D. Johnson, M.I.Mech.E., and one upon the "Water and Its Measurement," containing a useful account of the Venturi Meter.

The *Westminster Review* contains an article by Mr. George Trobridge on "The Nude in Art and Semi-nude in Society." With the latter we are not concerned, though we agree that it is open to criticism, much more indeed than the nude in art, the objects of which are much higher than mere display. The article is of course to a certain extent an attack—one of those which supervene every few years; but it is not unreasonable or Philistine in spirit. The author recognises that painting in the higher sense is impossible without life models, and yet seems to lament their existence—in regard to women at least. Managers of life schools, we believe, will tell him that it is easier to get women as models than men. The solution of the dilemma lies in the consideration that custom and the circumstances and object of an action to a great extent determine whether it is decorous or the contrary. A bathing dress would be indecorous in a drawing-room. A woman who poses as a life model may be said to be making a better use of her figure than one who has her ball-dress cut as low as possible to attract attention. As to the product—the nude in painting, some of the writer's remarks are true about some modern French pictures; not about any English ones that we can remember. But he misses, like so many others, the real point as to nude figures in painting and sculpture. It is not a mere

question of "beauty" (are we even agreed what "beauty" is?); it is that the nude figure represents the abstract and essential in human expression. Dress is the accidental and changeable element; hence it is in conflict with the highest poetry of art, even in painting; still more in sculpture, where abstract form is everything.

Harper contains an article by Mr. W. D. Howells on "Twenty-four Hours at Exeter," interesting as giving the effect of an English Cathedral and Cathedral City on the mind of an exceptionally cultured American, who has no cathedral cities on his own shores. No one, he observes, "without standing in that presence or another of its kind, can realise what the ages of faith were. Till then the phrase will remain a bit of rhetoric, but then he will live a meaning out of it which will die only with him."

Scribner contains a very good article on Timgad, under the title "On the Edge of the Desert," by Mr. Dwight L. Elmendorf, with illustrations from photographs and telephotographs by the author.

The *Century* contains an article of considerable interest to architects on "The Proposed Changes in the National Palace," i.e., the Capitol at Washington, with elevations and plans. The alterations are being carried out by Messrs. Carrère & Hastings. The criticism of a satirical senator was that the Capitol "was not a building with a dome on it, but a dome with a building under it"; in which there is some truth. The present architects, in order to meet this point, are bringing forward the portico and pediment a little, so as to throw the dome back, and have also added a column at each end of the portico colonnade. The demand for more interior space is to be met by the erection of two large and dignified blocks of new building, symmetrically in reference to the Capitol, and on opposite sides of the axis, one for the Senate House, the other for the Offices building. The whole should form a very fine group of buildings. A coloured illustration of "The New Madison-square Presbyterian Church" is oddly entitled "a new departure in church building"; it is a square domed church with a portico and pediment, like many in this country, at all events. The only new thing about it is the effect of coloured material—buff brick and glazed terra-cotta on a white marble base, with portico columns of pale green granite. The combination ought to have a good effect. Messrs. M'Kim, Mead, & White are the architects.

In the *Antiquary* Mr. Mann concludes his article on "Prehistoric Pile Structures in Pits in South-West Scotland," to the earlier portion of which we have already referred. He shows reason to think that the theory of dwellings, or at least of shelters or sleeping-places, for these timber-lined pits, is the most probable. "Letters from a Westmoreland Man in London, 1719-1734," throw some interesting light on London life of that day.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

AT the meeting of the Building Act Committee held on August 30, the proceedings were governed by the clause in the order of reference which empowers the Committee at certain seasons to act on behalf of the Council in relation to matters included in the Committee's order of reference:—

Lines of Frontage and Projections.

Hampstead.—The retention of open arched screens on the north side of All Souls' Church, Loudoun-road, Hampstead, abutting upon Alexandra-road (Messrs. Nicholson & Corlett).—Consent.

Fulham.—Houses on the north and south sides of Langthorne-street, Kenyon-street, Inglethorpe-street, Harbord-street, and Greswell-street, and the north side of Finlay-street, Fulham (Mr. C. Botterill for Mr. G. Murray).—Consent.

Hampstead.—An iron and glass shelter in front of the stable next No. 22, Belsize-square, Hampstead (Mr. H. Hogg).—Consent.

Newington, West.—A building on the site of No. 83, New Kent-road, Newington (Mr. G. A. Lansdown for Lord Glenesk and the Countess Bathurst).—Consent.

Wandsworth.—Buildings on the east side of Mitcham-road, Tooting, at the corner of Back (or Rectory) lane (Messrs. Milner, Son, & White).—Consent.

Bow and Bromley.—The retention of a building on the west side of Monier-road at the corner of Wick-lane, Bow (Messrs. J. Chessum & Sons).—Consent.

Chelsea.—A porch to Nos. 38 and 40, Beaufort-street, Chelsea (Mr. P. Hoffmann for Mr. F. L. Linzell).—Consent.

Fulham.—The retention of a wooden fence in front of No. 554, Fulham-road, Fulham (Fulham Electric Joinery works, Ltd.).—Consent.

Hackney, North.—An iron and glass porch and a bay window at No. 218, Green-lanes, Finsbury Park (Messrs. Hodson & Whitehead for Mr. A. R. Bagley).—Consent.

Hampstead.—A one-story shop and office building on the north-east side of High-road, Kilburn (Mr. A. Whitelaw for the London and North-Western Railway Company).—Consent.

Kensington, South.—The retention of a projecting glass and metal sign at No. 30, Fulham-road, Kensington (Messrs. Cooper & Co. for Messrs. J. Offord & Sons, Ltd.).—Consent.

Lewisham.—Porches to Nos. 111 to 129 (odd numbers only) inclusive, Longhurst-road, Lee (Mr. A. J. Wood).—Consent.

Lewisham.—Four houses on the west side of Brockley-rise, Lewisham (Mr. E. C. Thomas).—Consent.

Marylebone, West.—Extension of the period within which the rebuilding of Nos. 72, 73, 74, and 75, High-street, and No. 25, Nottingham-street, St. Marylebone, was required to be commenced be granted (Mr. F. M. Elgood for Mr. J. A. Michell).—Consent.

St. George, Hanover-square.—The retention of an iron and glass porch at the main entrance of No. 4, Hanover-street, Regent-street, W. (Mr. F. M. Hornsby for Whitehall Court, Ltd.).—Consent.

Wandsworth.—Porches to eight semi-detached houses and one detached house on the west side of Enmore-street, Putney (Mr. J. C. Radford for Mr. W. H. George).—Consent.

Woolwich.—The retention of bay windows to a block of four houses on the south side of Glenshiel-road, Eltham (Mr. J. J. Bassett for Mr. A. Cameron Corbett, M.P.).—Consent.

Kensington, South.—The retention of an illuminated sign at the "Kensington Arms" public-house, Warwick-road, Kensington (Mr. T. H. Smith for Mr. N. Foley).—Consent.

Clapham.—Houses on the northern side of a continuation of Thurleigh-road, Clapham (Mr. J. Smith).—Consent.

Strand.—Permission to affix a projecting Chappuis' reflector in front of No. 25, Charing-cross, Strand (Mr. H. Guest).—No order.

Fulham.—The erection of an addition to a bake-house at the side of No. 158, Munster-road, Fulham, to abut upon Swift-street (Mr. R. Burr for Mr. J. M. Groessel).—Refused.

Kennington.—A wood and glass covered way in front of St. Mark's Vicarage, Kennington Oval (Mr. W. Fitch for the Rev. J. Darlington, D.D.).—Refused.

Kensington, South.—An iron and glass awning over the entrance to No. 43, Pembroke-square, Earl's Court (Messrs. T. W. Heath & Son).—Refused.

Lewisham.—A wood and iron sign at No. 30A, Sydenham-road, Sydenham (Mr. J. M. Tillett).—Refused.

Lewisham.—One-story shops on part of the forecourts of Nos. 103, 105, and 107, Brownhill-road, Lewisham (Messrs. Norfolk & Prior for Mrs. Staines).—Refused.

Paddington, South.—An iron and glass conservatory at the first floor level in front of Keith House, Bayswater-road, Paddington (Mr. E. C. Macpherson for Sir Clifton Robinson).—Refused.

St. Pancras, South.—A bay window and four balconies in front of No. 14, Fitzroy-square, St. Pancras (Mr. M. M. Smith for the Trustees of the Hostel of St. Luke).—Refused.

Strand.—A projecting flue on the eastern side of the Savoy Hotel extension, projecting over the public way in Savoy-buildings (Messrs. T. E. Collcutt & S. Hamp for Savoy Hotel, Ltd.).—Refused.

Strand.—Two iron and glass signs at No. 11, Wardour-street, St. James's, Westminster (Mr. J. Richardson for Messrs. Sam Isaacs & Co., Ltd.).—Refused.

Wandsworth.—Buildings at the corner of Cavendish-road and Grove-road, Balham (Messrs. J. D. Mathews for Mr. H. King).—Refused.

Width of Way.

Bermondsey.—Buildings on the north and south sides of Sterry-street, Tabard-street, Southwark (Mr. P. Currey for the Governors of St. Thomas's Hospital Estate).—Consent.

City of London.—A warehouse building on the north side of Tenter-street, Moorfields, at less than the prescribed distance from the centre of the roadway of the street (Messrs. Nash & Detmar for Messrs. Raphael Tuck & Sons).—Consent.

Camberwell, North.—A one-story building on the north side of Canal Bank, Camberwell (Mr. R. A. Jack for Messrs. Findlater, Mackie, Todd, & Co.).—Consent.

Greenwich.—Buildings on the south-east side of Lamerton-street (late Queen-street), Greenwich (Mr. G. A. Lansdown for Mr. J. E. Lamerton).—Consent.

Hackney, South.—The retention of a forecourt fence in front of an addition to a workshop on the north side of Essex-street, Hackney (Mr. H. Willmott).—Consent.

Kensington, South.—A building at Nos. 3, New-road, Campden Hill, Kensington, at less than the prescribed distance from the centre of the roadway of the street (Mr. T. P. Figgis for Mr. C. Bell).—Consent.

Kensington, South.—A fence in front of Nos. 16 and 17, Newcombe-street, Notting Hill, at less than the prescribed distance from the centre of the street (Messrs. C. Bell, Withers, & Meredith for Mr. W. J. Masser).—Consent.

Peckham.—The retention of a one-story building at the rear of No. 58, Peckham-rye, Peckham (Mr. W. L. Dowton for Mr. F. L. Mitchell).—Consent.

Space at Rear.

Lewisham.—A modification of the provisions of section 41 with regard to open spaces about buildings, so far as relates to an irregular open space at the rear of Nos. 3 and 5, Salehurst-road, Crofton Park (Mr. J. W. Webb).—Consent.

Wandsworth.—A modification of the provisions of section 41 with regard to open spaces about buildings, so far as relates to the proposed erection of three buildings at Amen-corner, Back (or Rectory) lane and Mitcham-road, Tooting (Mr. E. Schneider for Mr. R. H. Miller).—Consent.

Battersea.—A deviation from the plans approved for the erection of clubrooms on a portion of the open space about "The Cedars" Clergy House, High-street, Battersea, to abut upon Orville-road (Mr. J. S. Quilter for Canon J. Erskine Clarke).—Consent.

Kensington, South.—A modification of the provisions of section 41 so far as relates to the erection of a back addition to No.7, Albert-place, Kensington (Messrs. John Barker & Co., Ltd., for Miss Dancer).—Consent.

Lewisham.—A modification of the provisions of section 41 with regard to open spaces about buildings, so far as relates to the proposed erection of a shed for a gas engine on the open space at the rear of No. 161, Brookbank-road, Lewisham (Mr. J. Kerslake).—Consent.

Wandsworth.—A modification of the provisions of section 41 with regard to open spaces about buildings, so far as relates to the proposed erection of buildings on the west side of Streatham Hill at the corner of Drewstead-road, Wandsworth (Messrs. Taylor & Sons for Messrs. Meech & Goodall).—Consent.

Wandsworth.—A modification of the provisions of section 41 with regard to open spaces about buildings, so far as relates to the proposed erection of a stable and coach-house on the space at the rear of No. 102, Revelstoke-road, Southfields (Mr. C. Botterill for Mr. C. Barwell).—Consent.

Westminster.—A deviation from the plans approved for the erection of Hopkinson House, upon a site abutting upon Vauxhall Bridge-road, Edward-street, and Douglas-street, Westminster, so far as relates to the omission of an air duct, and the provision of an additional open space to such building (Mr. R. S. Ayling for the Brabazon House Co., Ltd.).—Consent.

Strand.—A deviation from the plans approved for the erection of a building on the site of Nos. 36 and 36A, St. James's-street, and No. 64, Jermyn-street, St. James's, so far as relates to the substitution of one air duct for two air ducts (Mr. W. Woodward for Mr. L. Thomas).—Refused.

Formation of Streets.

Islington, South.—That an order be issued to Mr. H. Porter sanctioning the formation or laying out of a new street for carriage traffic to lead from Richmond-road to Cloudesley-square, Islington (for the Trustees of the Cloudesley estate).—Consent.

Dulwich.—That an order be issued to Mr. C. E. Barry, sanctioning the formation or laying out of a new street for carriage traffic, to lead from Woodwarde-road to Court-lane, Dulwich (for the Governors of Alleyn's College, Dulwich).—Consent.

Fulham.—That an order be issued to Mr. T. L. Kenton, sanctioning the formation or laying out of a new street for carriage traffic, in continuation of Ranelagh-gardens (late Hurlingham-avenue), Fulham (for the Hurlingham Club).—Consent.

Greenwich.—That an order be issued to Messrs. Crickmay & Heath, sanctioning the formation or laying out of a new street for carriage traffic to lead from Westcombe Park-road to Mycenae-road, Greenwich (for Mr. C. Johnson).—Consent.

Hackney, Central.—That an order be issued to Mr. W. A. Lewis, sanctioning the erection of a stable building in a yard approached from the south side of London-lane and west side of Mare-street, Hackney (for Messrs. N. Fortescue & Sons, Ltd.).—Consent.

Hampstead.—That an order be issued to Mr. F. Hingston, sanctioning the formation or laying out of a new street for foot traffic to lead from High-road, Kilburn, to Kilburn Priory (for Mr W. Stephens).—Consent.

Lewisham.—A deviation from the plan approved for the formation of a portion of Buckthorne-road, Brockley, so far as relates to an alteration in the position of a portion of Buckthorne-road, southwards of Eddystone-road (Messrs. Tompkins & Connew).—Consent.

Wandsworth.—That an order be issued to Messrs. Milner, Son, & White, sanctioning the formation or laying-out of new streets for carriage traffic on the Furzedown Park estate, Back (or Rectory) lane, Streatham.—Consent.

Norwood.—That an order be issued to Mr. E. Millard refusing to sanction the formation or laying out of two streets for carriage traffic on the Hayter estate on the west side of Brixton Hill (for Mr. R. A. Johnston).—Refused.

Dulwich.—That an order be issued to Mr. A. E. Mullins refusing to sanction the formation or laying out of a street for carriage traffic to lead out of Troy Town, Peckham (for Mr. J. Frampton).—Refused.

Wandsworth.—That an order be issued to Messrs. Briant & Son refusing to sanction the formation or laying out of new streets for carriage traffic out of Wavertree-road and Downton-avenue, Brixton (for the Westminster Investment Society, Ltd.).—Refused.

Lines of Frontage and Width of Way.

Hackney, North.—Five houses on the north side of Harrington-hill, at the corner of Ivy-terrace, Upper Clapton (Mr. W. Stone for Mr. J. L. Siggens).—Consent.

Mile End.—Buildings on the south side of Mile End-road (on the site of No. 560), at the corner of Burdett-road (Mr. W. E. H. Crawley for Mr. H. Iles).—Refused.

Lewisham.—A two-story warehouse on the south side of Loampit Vale (on the site of Nos. 61 and 63), Lewisham, at the corner of Shrubbery-road (Mr. A. W. Osborn for Messrs. G. A. Harvey & Co.).—Refused.

Newington, West.—Permission to retain a building on the forecourt of No. 25A, Deverell-street, Southwark, at less than the prescribed distance from the centre of the roadway of the street, and in advance of the line of the adjoining houses (Mr. G. Groves).—Refused.

Width of Way, Line of Frontage, and Construction.

Camberwell, North.—A wooden gantry at the rear of No. 146, Wyndham-road, Camberwell, to abut upon Westhall-road (Mr. J. J. Freeland for the Automobile Wheel Co., Ltd.).—Refused.

Marylebone, West.—The retention of a shed at No. 12, Gray's-buildings, at less than the prescribed distance from the centre of the roadway of Edwardes-mews, St. Marylebone (Messrs. Steinway & Sons).—Consent.

St. Pancras, South.—Buildings on the site of Nos. 183 and 185, King's Cross-road, and Nos. 31 and 32, Field-street, St. Pancras (Mr. E. J. Harrison for Mr. D. L. Cohen).—Consent.

Width of Way, Space at Rear, and Projections.

St. George, Hanover-square.—A building on the site of Berkeley Chapel on the north side of Charles-street at the corner of John-street, Mayfair, with an irregular open space at rear, and projecting porches, balcony, and an angle turret partly of oak (Mr. R. G. Hammond for Mr. J. Garlick).—Consent.

Lines of Frontage and Space at Rear.

Strand.—A building for the United Universities Club, Suffolk-street, and Pall Mall East, with projecting portions and balconies in Suffolk-street and Pall Mall East, and an irregular open space at rear (Mr. R. Blomfield, A.R.A.).—Consent.

Means of Escape from the Top of High Buildings.

Westminster.—Deviations from the drawings showing the means of escape to be provided from blocks D, E, and F, St. James's-court, so far as relates to an alteration in the positions of escapes (Mr. H. Bushell).—Consent.

Alteration and Addition to Building.

Westminster.—The construction of an additional story to Iddesleigh Mansions, Caxton-street and Palmer-street, Westminster (Mr. H. A. Luke for Mr. W. A. Fleming).—Refused.

ARCHÆOLOGICAL SOCIETIES.

THE NEWCASTLE SOCIETY OF ANTIQUARIES: EXCURSION TO CHESTER-LE-STREET.—The members of the Newcastle Society of Antiquaries held an outdoor meeting last week at Chester-le-Street. They first visited the Parish Church, which was described by the rector (the Rev. A. B. de Moleyns). The church is mostly in the Early English style; the spire was added probably when the bells were presented to the church in 1409. At one time the parish extended from Gateshead on the north to Durham on the south, and Houghton-le-Spring on the east to Lanchester on the west—a distance of seventy or eighty square miles. When the Danes invaded Lindisfarne, the monks left that place and came to Chester-le-Street, carrying the bones of St. Cuthbert with them. Chester-le-Street was subsequently formed into a bishopric, and it had had eight bishops. The see was removed to Durham in 995, the probable reason being that the Danes invaded Chester-le-Street. The monks then carried the bones of St. Cuthbert away, and interred them at Durham. The bishopric of Chester-le-Street at one time extended right from Edinburgh to York, and the diocese of Chester-le-Street was one of the richest livings in the whole of England. Under Henry VIII. the collegiate establishment, with those at Lanchester, Bishop Auckland, Darlington, and other places was dissolved, and the revenues went to the Crown, the value of the living being reduced to the sum of 10*l.* a year. What remains is a fine church not very much altered from its original design. The party subsequently visited Lumley Castle, the seat of the Earl of Scarborough, an Edwardian castle, which retains on one face its ancient turrets and machicolations.

COMPETITIONS.

TECHNICAL INSTITUTE, ROCHESTER.—Mr. F. Baggallay, the assessor in this competition, has made his award as follows:—First premium, Design No. 72; second premium, Design No. 74; third premium, Design No. 45. No. 72 is by Messrs. Russell & Cooper, 11, Gray's Inn-square; No. 74 by Messrs. Crouch, Butler, & Savage, 39, Newhall-street, Birmingham; No. 45 by Mr. W. H. Knowles, 37, Granger-street, Newcastle-on-Tyne. The designs are on view at the Corn Exchange, Rochester, from Wednesday the 13th to Monday the 18th (excluding Sunday).

CHAPEL AND SCHOOL, BRADFORD.—At the request of the trustees, four Bradford architects recently submitted plans for a chapel and school at the corner of Shearbridge-road and Woodhead-road, to take the place of Mannville Chapel and School. Mr. W. E. Potts, of the firm of Messrs. Potts, Son, & Hennings, architects, of Manchester and Bolton, who was the assessor, has awarded the first premium of £10 10s. to Mr. Edgar H. Parkinson, the designs of Mr. Abraham Sharp being placed second. Mr. Parkinson has been entrusted with the carrying out of his plans.

Correspondence.

THE LONDON TRAFFIC COMMISSION AND THE GARDEN CITY MOVEMENT.

SIR,—The report of the London Traffic Commission involves the spending of a very large sum of public money, which is particularly undesirable considering the enormous load of public debt which exists already. It seems doubtful whether the expenditure of this money is either desirable or necessary at the present time.

The report proceeds on the basis that the traffic in London will always be as great as it is at present, and will tend to increase.

The increased advantages for carrying on work at a distance which are afforded by the telegraph and telephone, and also by the increased railway and tramway facilities, seem to have been overlooked.

It is quite unnecessary at the present day for a large number of the trades which are carried on in London to remain there; they can be carried on more cheaply and under better conditions elsewhere. This has already been been proved in many instances by manufacturers such as Messrs. Cadbury and Messrs. Lever, who have removed their premises out of large cities and have gained very considerably by doing so. We often find, from our experience as quantity surveyors, that in the case of builders, those who have their yards at a considerable distance from London are able to compete with London builders who are on the spot. I need only mention Messrs Foster & Dicksee and Messrs. Parnell, of Rugby; Messrs. Thompson, of Peterborough; Messrs. Rudd, of Grantham, as well as many others. These builders gain by the fact that their joinery is made out of London. The advantage is of course much greater in a factory where the whole of the goods are made out of London, as in the case of the builder a great deal of work must be done on the spot, such as brickwork and the carcase work generally.

It is generally recognised now that the congestion of industries in very large cities is a grave danger both to the cities themselves and to the country districts, which are drained of their inhabitants. It is, of course, as a rule, necessary and desirable to have the head office of a business in London owing to the facilities of communication, but it is quite possible to have the offices connected with the works at a very considerable distance by telegraph and telephone, and almost as good control is obtained in this way as by having the works in London. The saving in rent is enormous, and the premises can, as a rule, be built on far more convenient plans owing to restrictions of space, light, and air being removed. The benefit to the workpeople employed is also very great, as they are able to obtain better accommodation and fresh farm produce at lower prices, besides living in far more healthy surroundings. The surrounding farmers benefit by having a market for their produce brought close to them instead of paying heavy railway rates and market dues in London. London itself gains in every way, partly owing to the increased space allowed by the removal of the factories and also of the homes of those they employ. The smoke caused by the factories and houses is abated, the congestion on the suburban railways is lightened, and the facilities of traffic in London are immensely increased. Everyone knows how frequently, when time is important, a cab is entirely stopped by the fact that some street is blocked by two or three large waggons which are standing in front of factories either taking in or discharging goods, and the value of time lost in this way must, in the course of the year alone, be a very large item.

I cannot help thinking, therefore, that the lines on which the Garden City is moving are the right ones, and that every effort should be made in the future to move the factories into smaller towns scattered throughout the country, rather than to persist in concentrating them in huge cities. It would probably, to a large extent, help to prevent the depopulation of the country districts to the extent which is now going on, and the advantages to the health and convenience of the large cities would be incalculable.

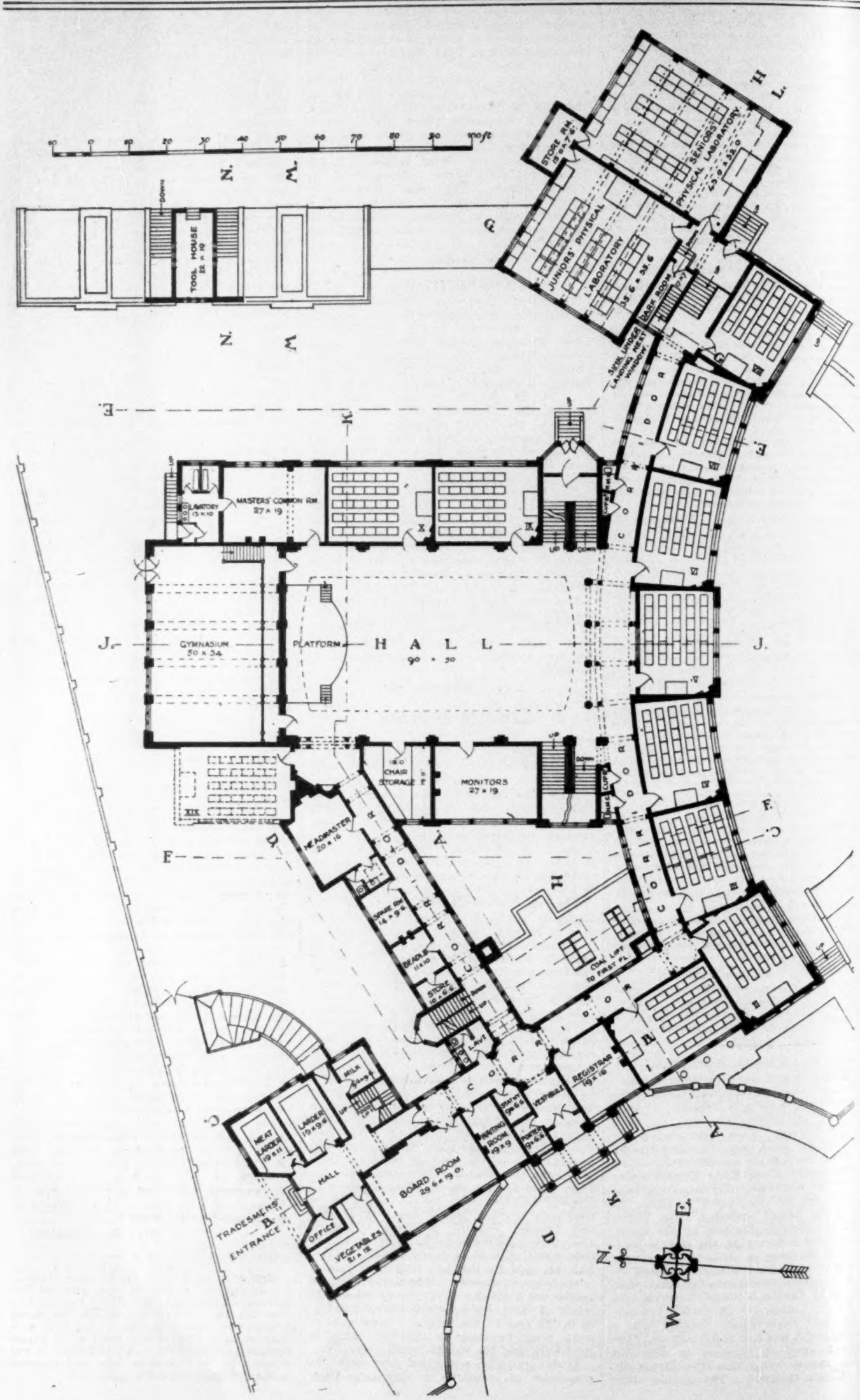
At present London is perpetually increasing its already huge debt by efforts to cope with the cheap housing of the working classes on expensive sites, their cheap conveyance by railway and trams, the education and holidays of their children, and many other problems.

I think, therefore, that although there are some practical defects in the way the present Garden City is being carried out, principally owing to inexperience in the problem with which they have to deal, the movement deserves every encouragement from all who desire to see the public burdens lightened. It is a far cheaper method than that proposed by the Traffic Commission, and the effects would be permanent. It would also have the great contingent advantage that the physique of the workers and their children would be improved, which is acknowledged now to be a very important object, and they would be placed in such a position that they could enjoy all the benefits of the country without the additional expense of travelling, which is a very serious item where the wages are small.

It would not be necessary in every case to build a new town on the lines of the Garden City. There are plenty of small towns, such as Guildford, Godalming, etc., which already exist on the main lines of railway between London and the chief seaports, which could be developed in this way with very great benefit to the general population, although, in these instances, the conditions of land tenure would not be so favourable to the tenant as those enjoyed by the tenants of the Garden City Company.

GUY M. NICHOLSON.

MEMORIAL TO PROFESSOR HUGHES, CORRIS, MERIONETH.—A monument was unveiled last Saturday in memory of Dr. Alfred Hughes, who organised the Welsh Hospital for the South African war. The memorial, in the form of a Celtic cross, is situated on a bank called Braich Coch, and overlooks the village of Corris. It was designed by Mr. Goscombe John, and executed in Isle o' Fair Rose granite.



Mr. Waterhouse's Design for University College Schools. Ground Plan of Main Building.

ENGINEERING STANDARDS COMMITTEE.

THE British Standard Specifications for Telegraph Material included in Report No. 16 have been drawn up by the sub-committee on telegraphs and telephones under the chairmanship of Mr. John Gavey, C.B., the duties of this committee somewhat overlapping those of the sub-committee on cables. The standards for copper given in the present Report have been agreed by the two committees, and have been previously published in Report No. 7, entitled "British Standard Tables of Copper Conductors and Thicknesses of Dielectrics." Specifications are now issued for galvanised iron wire for electrical and mechanical purposes, as well as for such galvanised ironwork as is generally used for telegraphs and telephones. In addition to the specifications and tables, a number of very useful drawings are given of ironwork, such as that mentioned above. Owing to the costly character of copper, and to the fact that manufacturers are not likely to stock it in large quantities, it was decided not to prepare a specification for copper wire, and not to do anything further in the way of standardisation than the preparation of tables giving data based on the standards already published. We notice also that no attempt has been made to standardise submarine or underground cables or telegraphic and telephonic apparatus.

Report No. 23, containing the British standards for trolley groove and wire, consists of a single page giving the dimensions of a standard trolley wheel groove for tramway use, and specifying the tensile strength of trolley wire. It seems a pity that the design of trolley wheels was not also standardised, but we presume that the committee have found it difficult to prepare a design acceptable to all parties concerned.

BOOK RECEIVED.

PANNELL'S REFERENCE BOOK: FOR HOME AND OFFICE. (The Granville Press. 6s. 6d.)

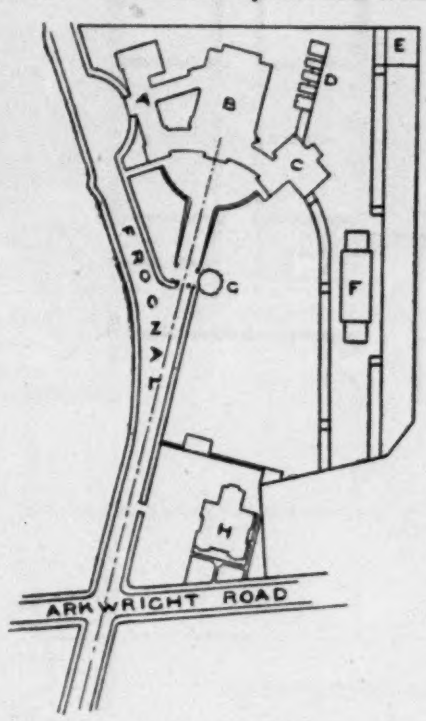
Illustrations.

THE FRARI FROM THE SCUOLA DI SAN ROCCO.

THE view of the Frari here illustrated is that seen from the steps of the Scuola di San Rocco in the little square of that name. As is often the case in Venetian churches, the apse is the most interesting feature of the church externally. The reproduction is from a water-colour drawing made by Mr. W. Curtis Green in 1900.

COMPETITION DESIGNS FOR UNIVERSITY COLLEGE SCHOOL, HAMPSTEAD.

THE first of the two designs here illustrated is that submitted by Mr. Paul Waterhouse in the recent limited competition. The governing factor was the recommendation that the class-rooms should have a sunny aspect, and an attempt was made to obtain balance and symmetry on the resultant long southern frontage by taking the centre line of the straight part of Frognal as the axis of the composition. The divergence of the roadway at the north end of the site made a convenient expansion of the ground to provide for an administrative block which should be both square to Frognal and at the same time radial to the curve of the south or class-room frontage.



Mr. Waterhouse's Design for University College Schools. General Block Plan.

REFERENCES.

A—Administration block.
B—Hall.
C—Science block.
D—Sanitary blocks.
E—Carpenter's shop.
F—Covered playground.
G—Lodge
H—Preparatory school.

The fact that the playground entrance would be 15 ft. below the principal or west entrance made it possible, while keeping the central hall at the level of the latter, to secure boys' entrances in a basement which would be still above the ground. In the basement ample accommodation was provided for the cloak-rooms, lavatories, cycles, boilers, etc. The gymnasium was to be at a higher level, and with a gallery approached from and level with the hall.

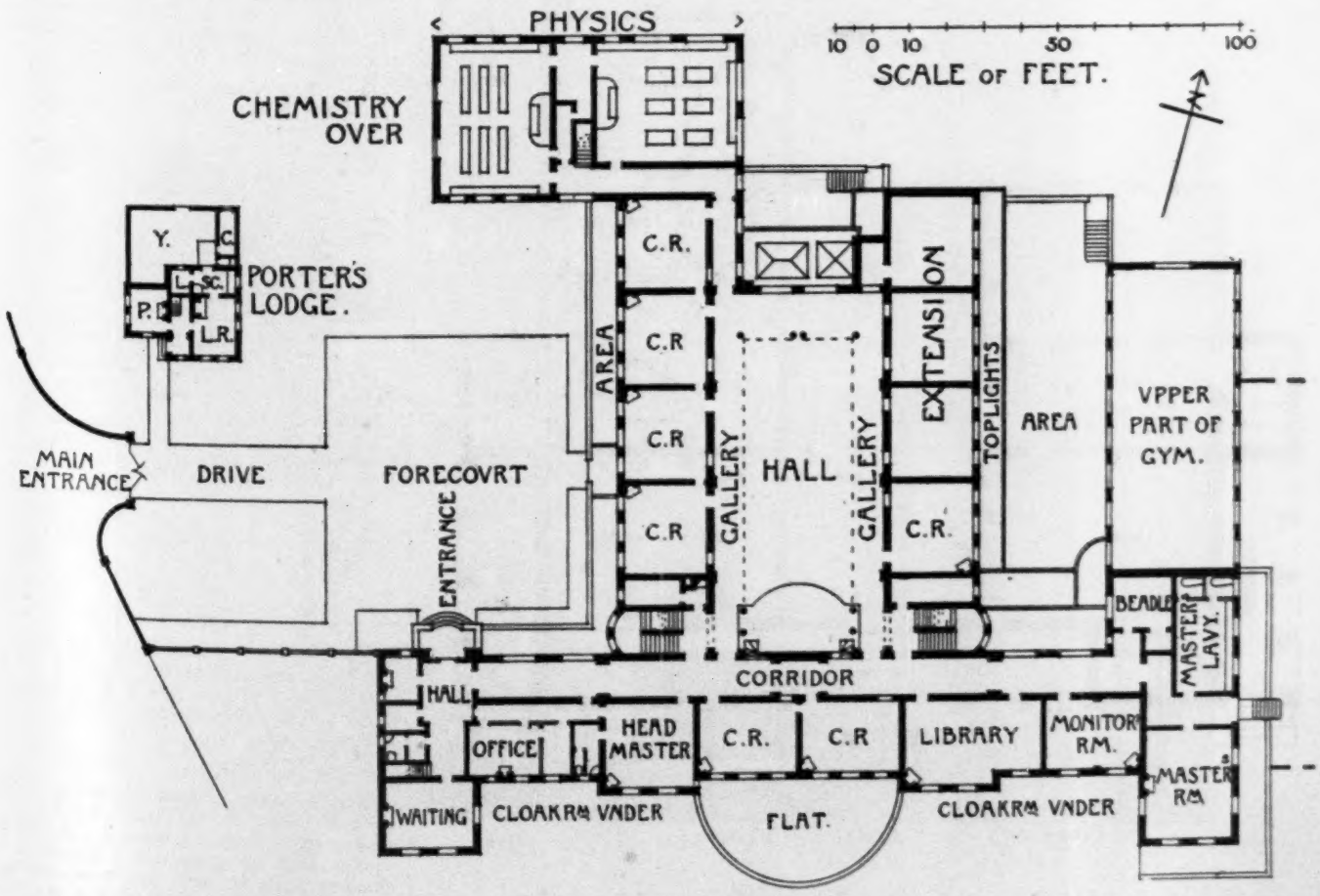
The arrangement of the ground floor is largely explained by the published plan. The science block is intentionally kept distinct from the other class-rooms. The hall was so arranged as to be quickly filled or emptied from the adjacent corridors and staircases. On the first floor accommodation was provided for thirteen ordinary class-rooms, besides art rooms, chemical laboratories, library, and kitchen department. The second floor comprised the dining-hall (occupying the whole length of the Frognal frontage) and convenient serveries. In the south-east pavilion were the music and practising-rooms.

For the elevations it was proposed to use red and brindled bricks, with dressings of Ham-hill stone. All roofs were to be of concrete, the flat roofs being asphalted, and the pitched ones covered with green Cumberland slates.

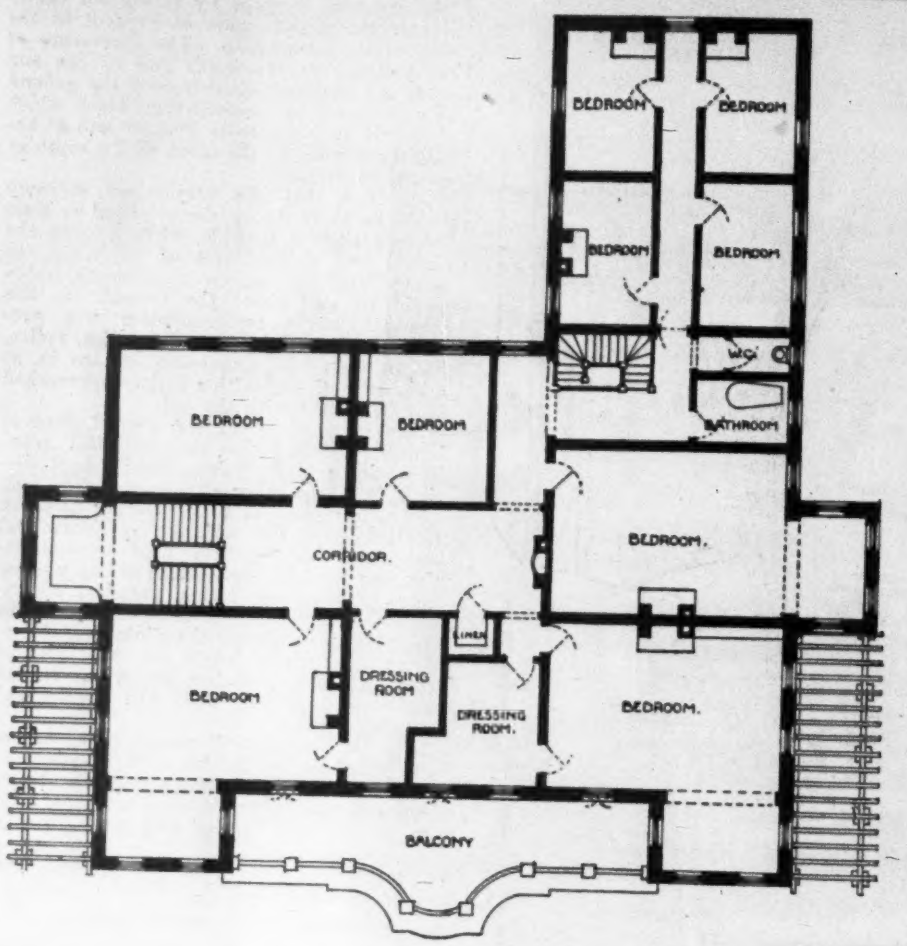
The approximate cost was estimated at from 70,000*l.* to 75,000*l.*

DESIGN BY PROFESSOR SIMPSON.

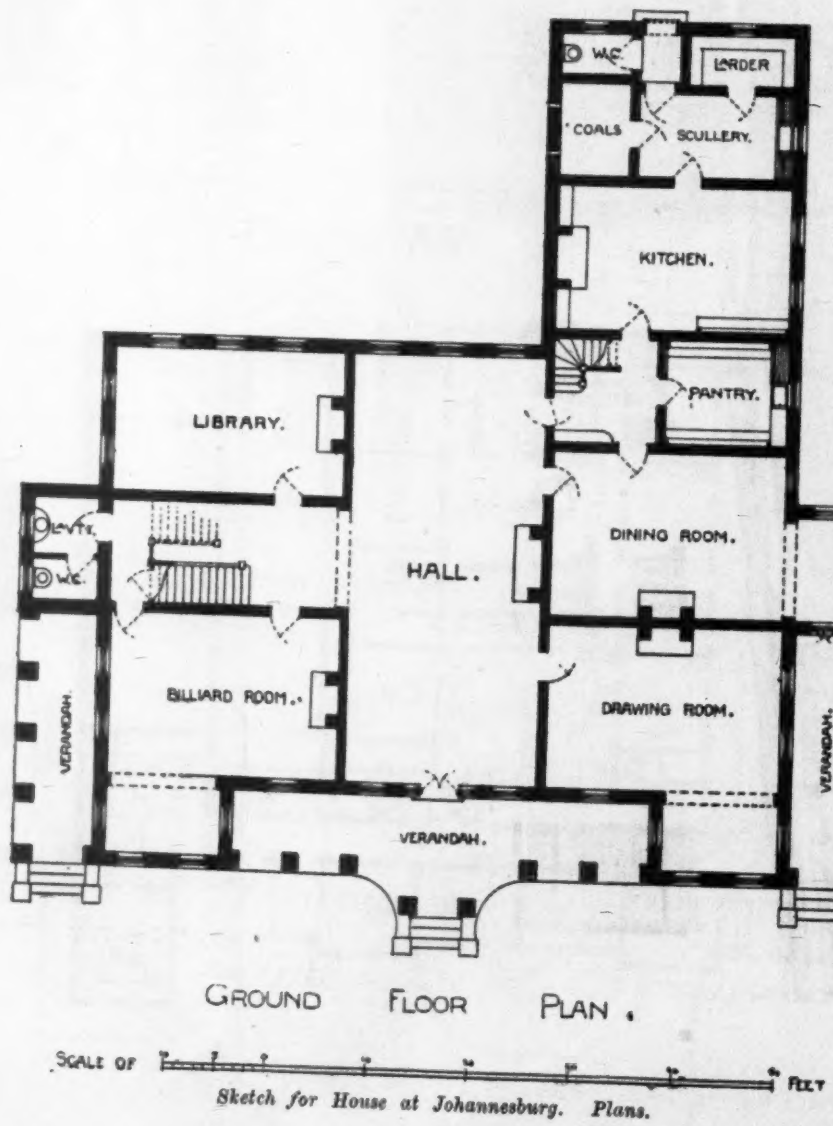
In this design, the building was planned on the high ground at the north end of the site in order to (1) leave as much ground as possible available for playground, (2) to obtain a principal front facing south towards the bottom of Frognal, (3) to obtain south aspect for as many rooms as possible, (4) to screen the latrines, carpenters' shop, etc. The class-rooms are grouped round a central hall, ten



Competition Design for University College Schools: By Professor Simpson.



FIRST FLOOR PLAN



GROUND FLOOR PLAN.

SCALE OF FEET

Sketch for House at Johannesburg. Plans.

on the ground floor, fourteen on the first; eight classrooms face south, eight face east, and eight face west. The principal entrance and administrative block are in one wing of the south front, the library and masters' rooms, etc., in the other. The cloak-rooms, lavatories, and covered playground face south in the basement (which on this side is entirely above the ground); the dining-room, kitchens, etc., are also in the basement, but the first is partly toplighted, and all its windows are above the wide area between the main block and gymnasium. The art rooms face north and east (over the masters' rooms), and the science wing is to the north.

SKETCH FOR PROPOSED HOUSE AT JOHANNESBURG.

THIS is an illustration of a design, made alternatively, for a house proposed to be built at Johannesburg, South Africa. It was intended that the walls should be built of brick, rough cast externally. The roofs would be tiled, and the woodwork generally painted white, except the doors and shutters, which would be bright green. R. A. BRIGGS.

The Student's Column.

STEAM BOILERS AND PIPES.—XI.

MAIN FLUES AND ECONOMISER SETTING.

MAIN flues, connecting the boiler setting proper with the chimney, vary considerably in construction and length with the type of boiler. The flue may be of stone, brick, steel, or steel lined with fire-brick, but brick is the material most generally employed.

Being horizontal, the main flue is subject to somewhat heavy accumulations of soot and dust, which reduce the effective area to a considerable extent. Therefore the dimensions should not be cramped, especially for boilers of small diameter. Sufficient space should be afforded, wherever possible, for the passage of a man through the flue for the purposes of cleaning, inspection, and repair.

A common practice is to make the area of the main flue equal to from one-fifth to one-third of the area of the grate surface of the boiler, and to reduce the area so found by about 20 per cent. for a range of two or three boilers.

Computed in this way, the areas for the main flues of Cornish and Lancashire boilers of average proportions are approximately as stated in Tables XV. and XVI.

TABLE XV.—APPROXIMATE DIMENSIONS OF MAIN FLUES FOR CORNISH BOILERS.

Diameter of Boiler Shell.	Main Flue for One Boiler.	Main Flue for Three Boilers.
ft. in.	Sq. ft.	Sq. ft.
3 6	0·80 to 1·33	1·92 to 3·20
4 0	1·00 „ 1·66	2·40 „ 4·00
4 6	1·50 „ 2·50	3·60 „ 6·00
5 0	2·10 „ 3·50	5·04 „ 8·40
5 6	2·70 „ 4·50	6·48 „ 10·80
6 0	3·60 „ 6·00	8·64 „ 14·40
6 6	4·10 „ 6·85	9·84 „ 16·40
7 0	4·60 „ 7·66	11·04 „ 18·40

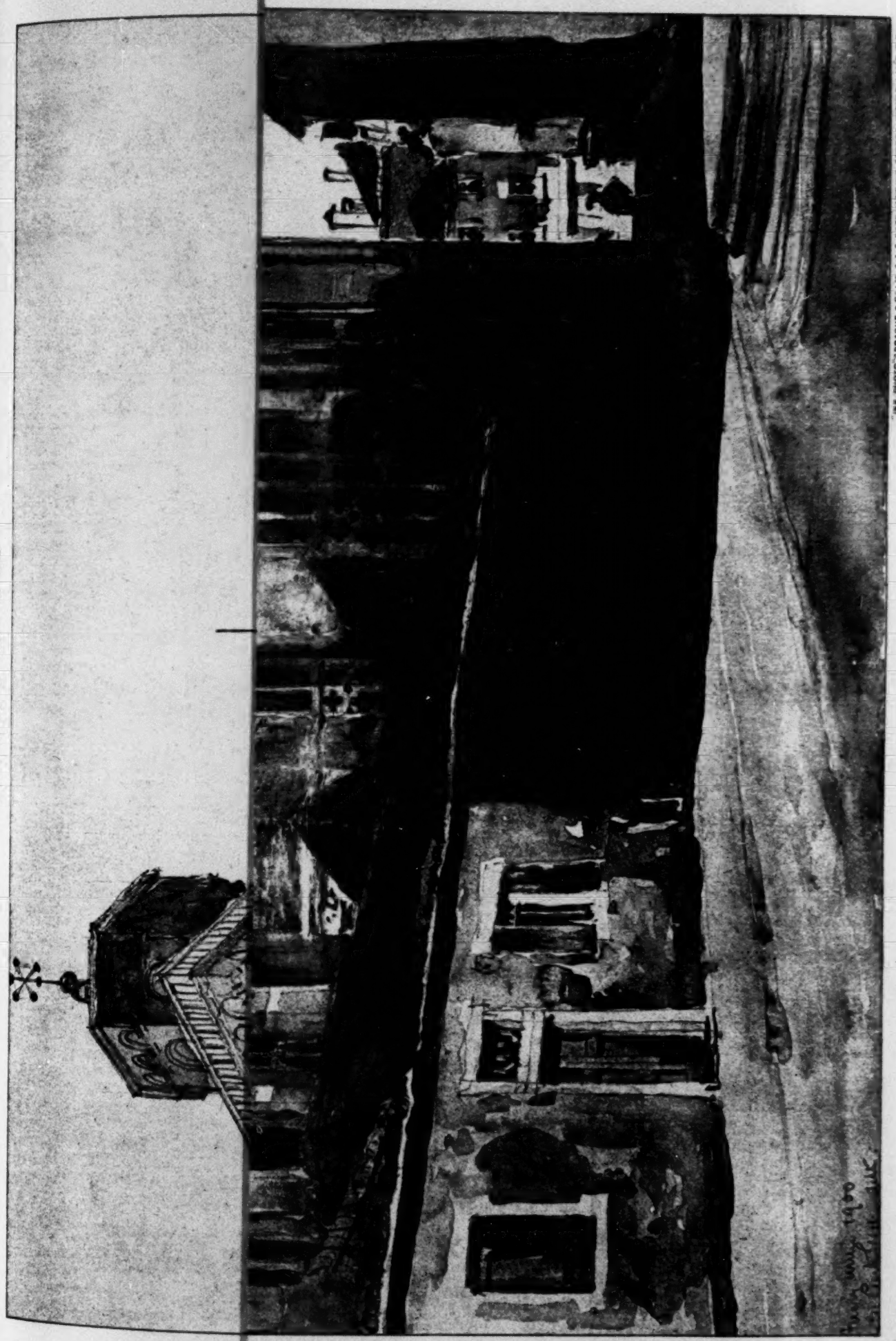
TABLE XVI.—APPROXIMATE DIMENSIONS OF MAIN FLUES FOR LANCASHIRE BOILERS.

Diameter of Boiler Shell.	Main Flue for One Boiler.	Main Flue for Three Boilers.
ft. in.	Sq. ft.	Sq. ft.
6 0	4·00 to 6·66	9·60 to 16·00
6 6	5·00 „ 8·33	12·00 „ 20·00
7 0	6·00 „ 10·00	14·40 „ 24·00
7 6	7·00 „ 11·66	16·80 „ 28·00
8 0	8·00 „ 13·33	19·20 „ 32·00
8 6	9·00 „ 15·00	21·60 „ 36·00

A more precise method of settling the proportions of the main flues is to calculate the areas by the following formula:—

$$A = \frac{(G \times C) \times x}{\sqrt{H}} \quad \ldots\ldots\ldots\ldots (2)$$

Where A = area of main flue in square feet; G = grate area of the boiler or boilers in square feet; C = coal consumed per hour per square foot of grate area; H = height of chimney shaft in feet; and x = a coefficient, the value of which is 0·125 for one boiler and 0·1 for two or three boilers.



THE FRARI FROM THE SCUOLA DI SAN ROCCO, VENICE.

en on the first; eight face east, principal entrance are in one wing rary and masters' The cloak-rooms, ground face south this side is en- the dining-room, he basement, but ted, and all its ide area between nasium. The art (over the masters' g is to the north.

ED HOUSE AT URG.

f a design, made roposed to be built frica. It was in- l be built of brick, e roofs would be generally painted d shutters, which R. A. Briggs.

Column.

ND PIPES.—XI.

OMISER SETTING.

necting the boiler with the chimney, ly in construction the type of boiler. ne, brick, steel, or but brick is the mployed.

ain flue is subject ulations of soot and effective area to a refore the dimen- ped, especially for r. Sufficient space rever possible, for rough the flue for g, inspection, and

o make the area of m one-fifth to one- rate surface of the area so found by a range of two or

the areas for the Lancashire boilers are approximately nd XVI.

E DIMENSIONS OF RNISH BOILERS.

or .	Main Flue for Three Boilers.
	Sq. ft.
3	1·92 to 3·20
6	2·40 ,, 4·00
0	3·60 ,, 6·00
0	5·04 ,, 8·40
0	6·48 ,, 10·80
0	8·64 ,, 14·40
5	9·84 ,, 16·40
6	11·04 ,, 18·40

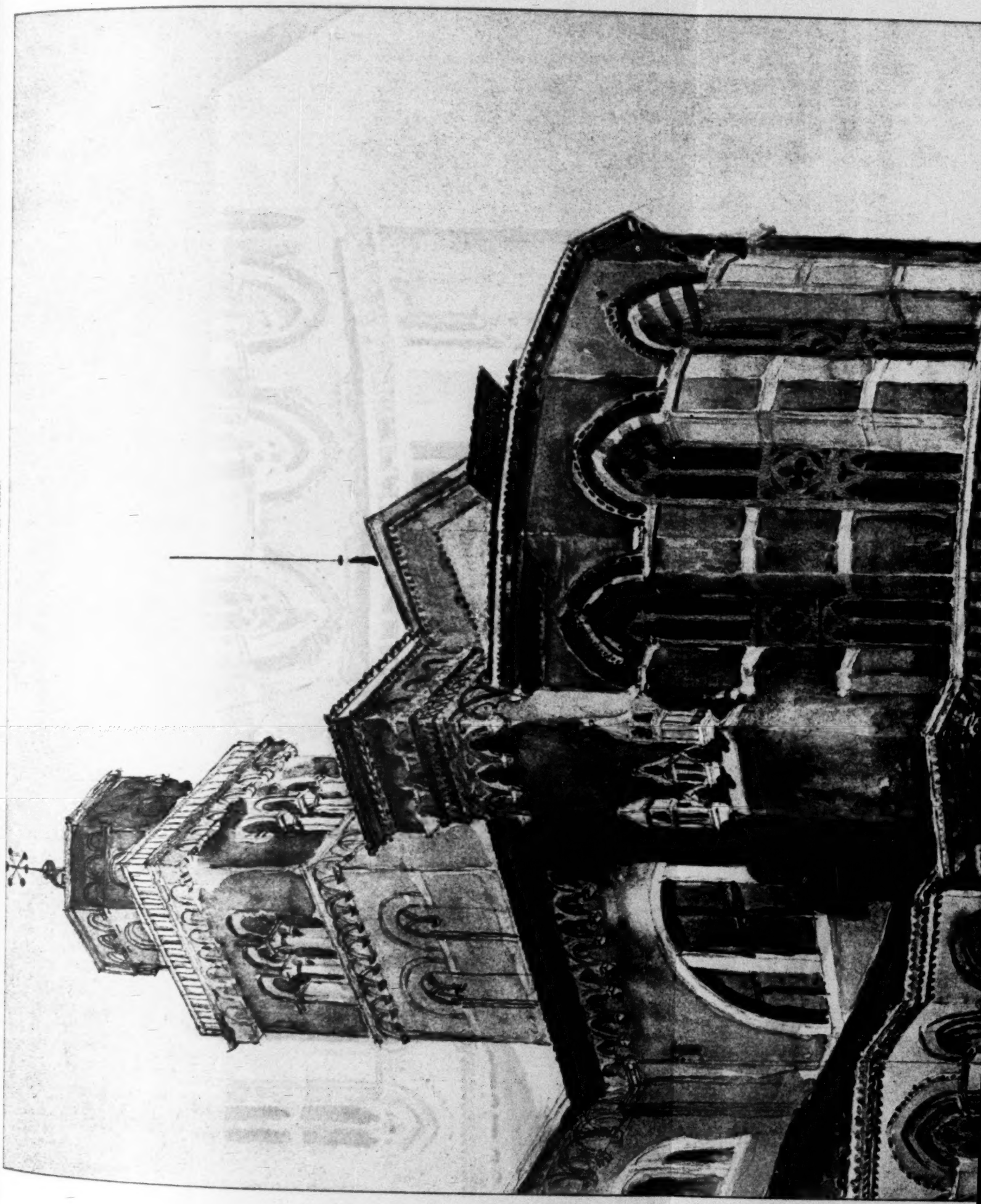
TE DIMENSIONS OF ASHIRE BOILERS.

or .	Main Flue for Three Boilers.
	Sq. ft.
6	9·60 to 16·00
3	12·00 ,, 20·00
0	14·40 ,, 24·00
6	16·80 ,, 28·00
3	19·20 ,, 32·00
0	21·60 ,, 36·00

of settling the pro- is to calculate the rmula :—

..... (2)

flue in square feet; iler or boilers in mmed per hour per ea; H = height of nd x = a coefficient, 125 for one boiler boilers.



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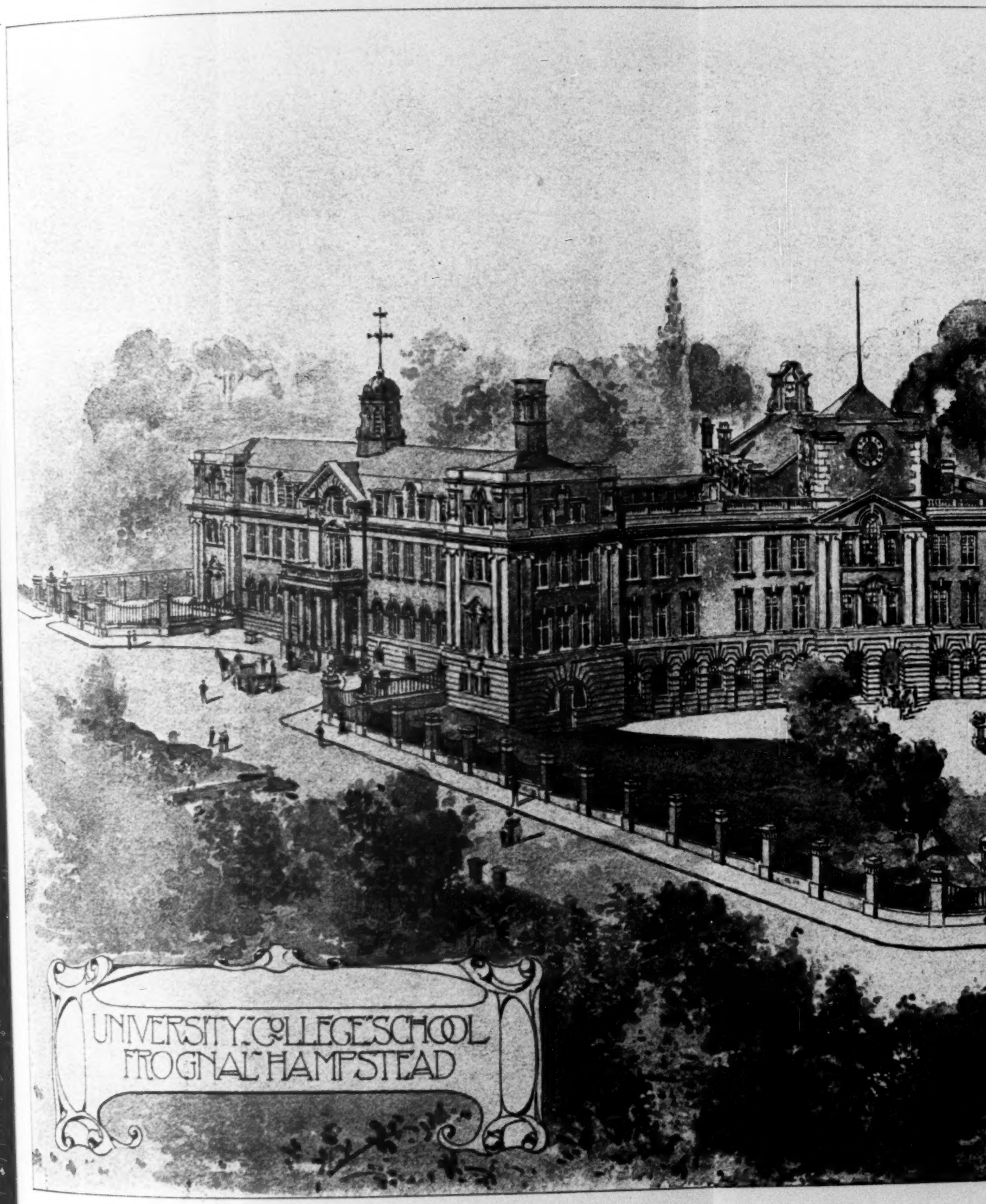
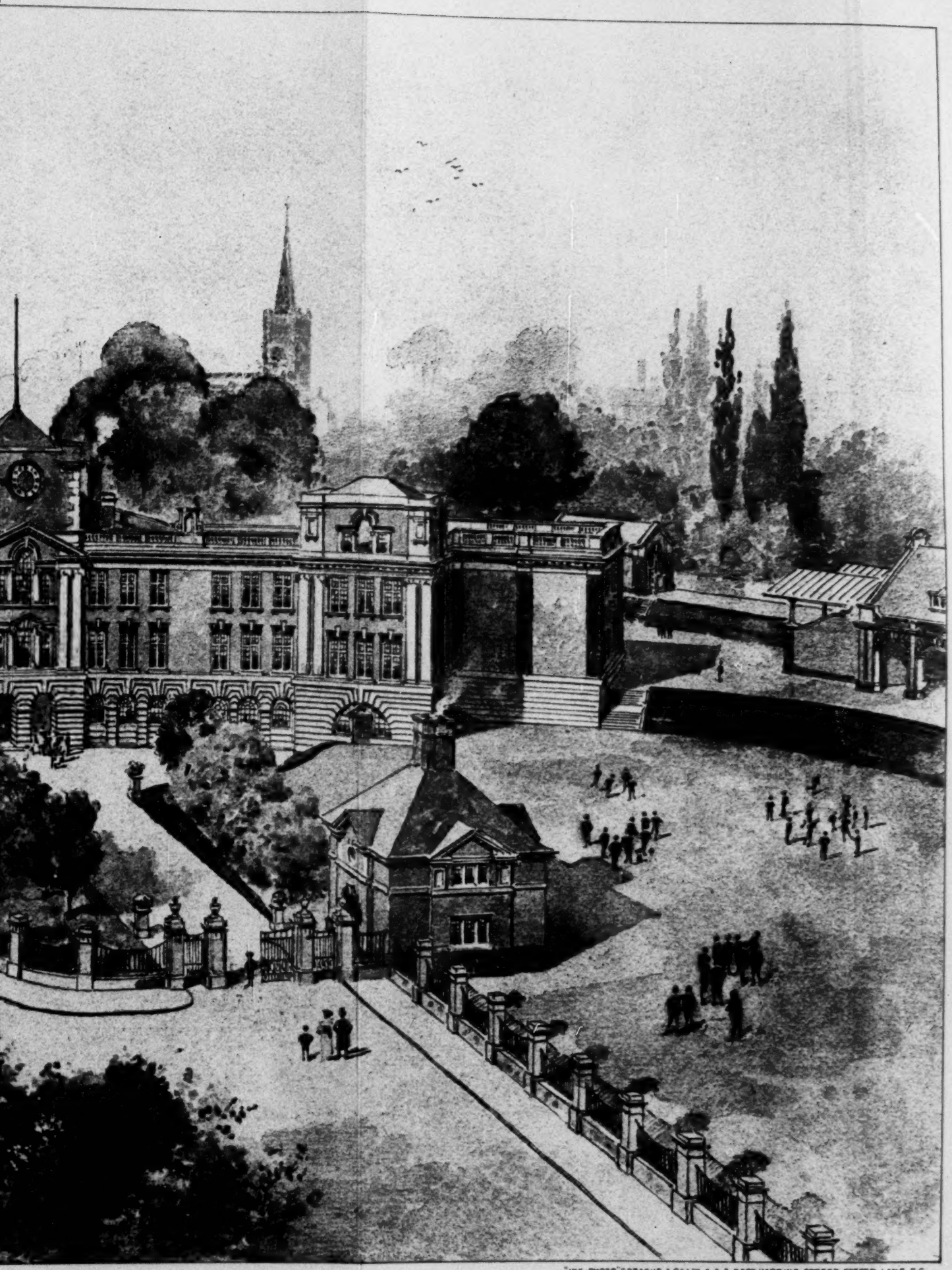
THE FRARI FROM THE SCUOLA DI SAN ROCCO, VENICE.



COMPETITION DESIGN FOR UNIVERSITY COLLEGE SCHOOLS, HAMPST



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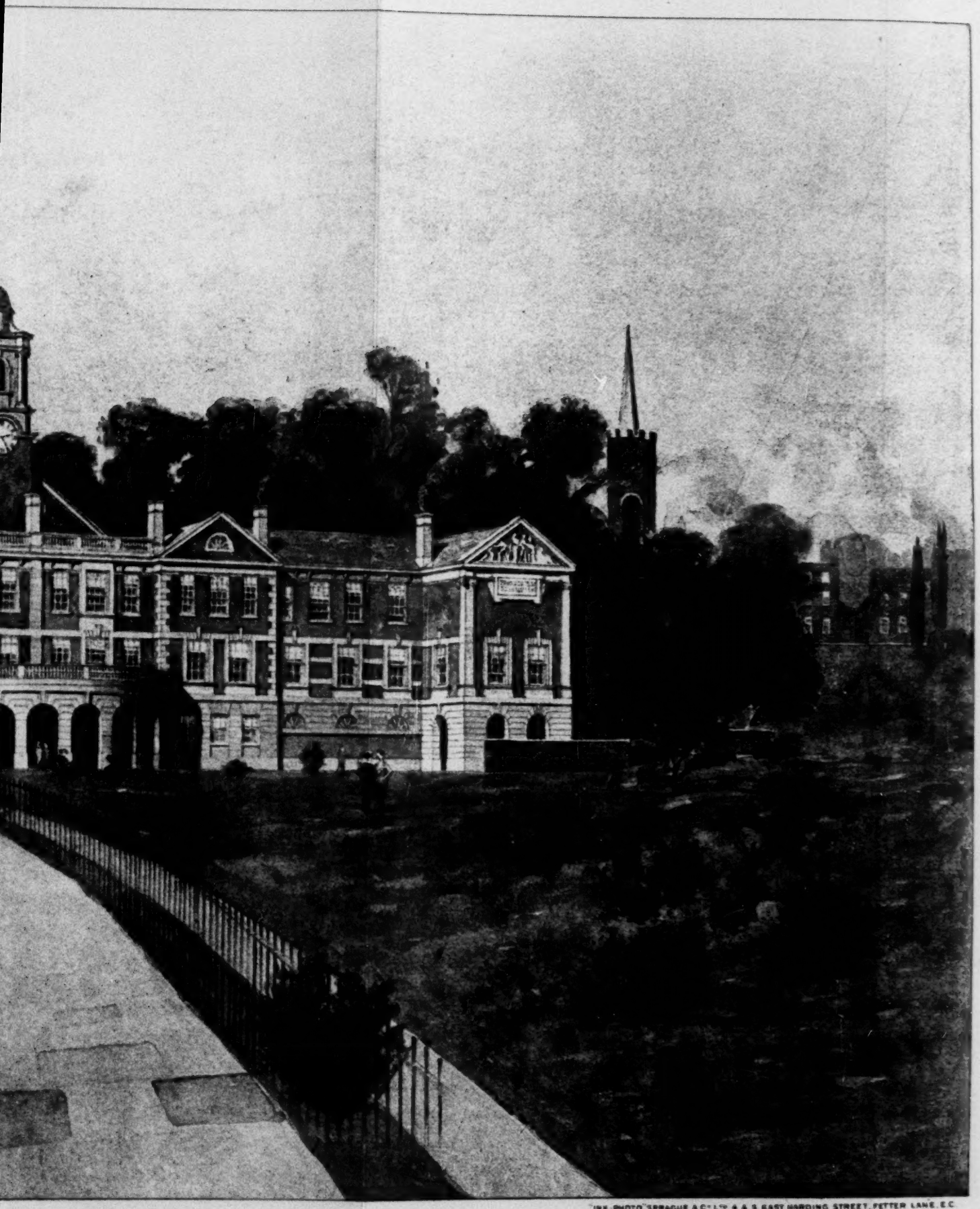
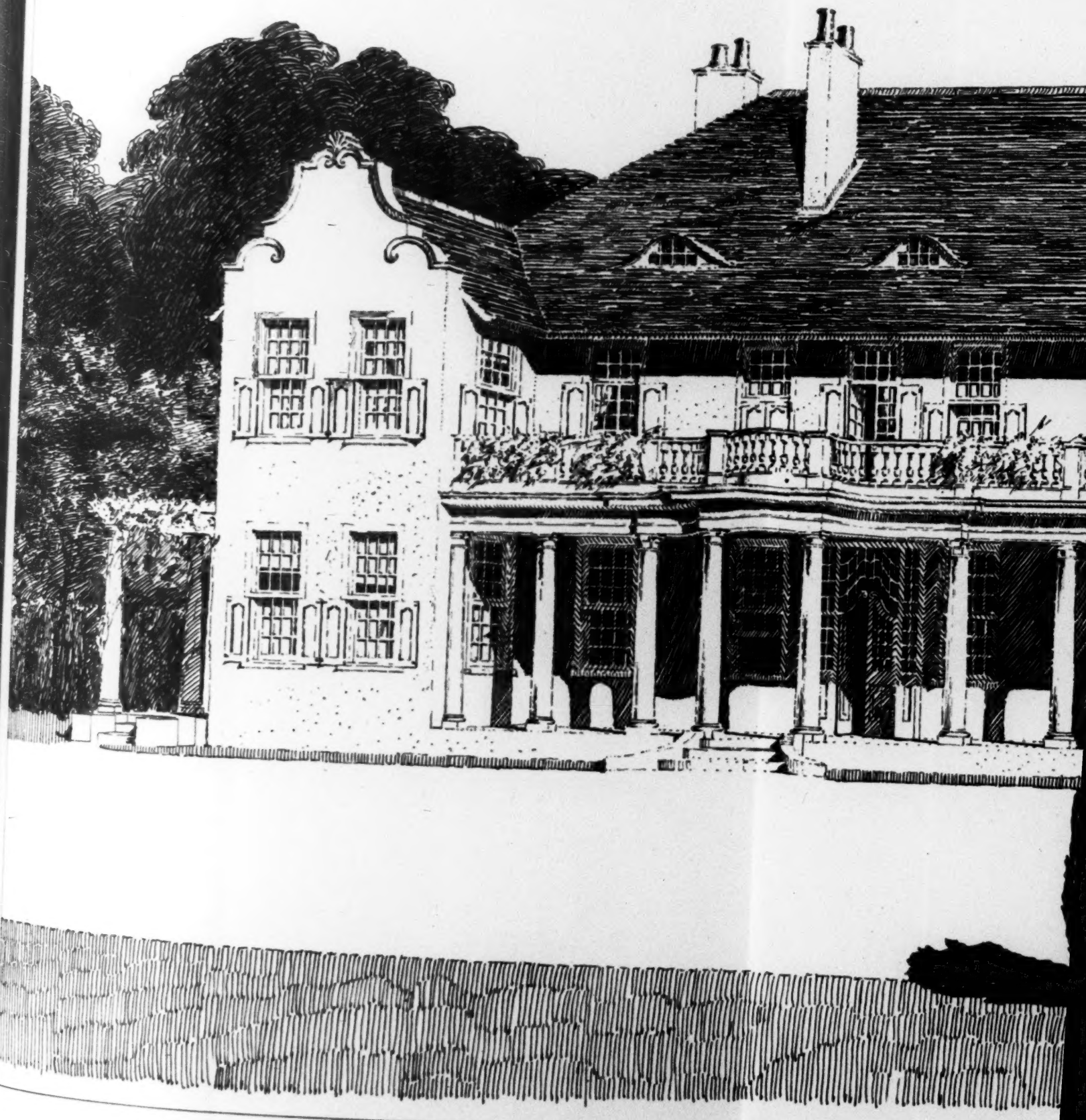
CHOOLS, HAMPSTEAD.—By Mr. Paul Waterhouse, F.R.I.B.A.

COMPETITION DESIGN FOR UNIVERSITY COLLEGE SCHOOLS, HAMPS



INK-PHOTO, SPRAGUE & Co LTD 4 & 5, EASY HARDING STREET, FETTER LANE, E.C.

SCHOOLS, HAMPSTEAD.—By Professor Simpson, F.R.I.B.A.



SKETCH FOR HOUSE AT JOHANNESBURG, SOUTH AFRICA.—Mr. R.

PHOTO-LITHO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

AFRICA.—Mr. R. A. Briggs, F.R.I.B.A., Architect.

The convenience of this rule is shown by the following examples:—

Example (1).—Required to find the area of the main flue for a Cornish boiler, 6 ft. 6 in. diameter, with a grate area of 20 sq. ft. and burning a maximum of 20 lb. of coal per square foot of grate, the height of the chimney shaft being 75 ft.

Then

$$A = \frac{(G \times C)\,0{\cdot}125}{\sqrt{H}} = \frac{(20 \times 20) \times 0{\cdot}125}{\sqrt{75}} = 5{\cdot}77 \text{ sq. ft.}$$

Example (2).—Required to find the area of the main flue for three Cornish boilers, each of the same size as those in Example (1) and burning the same amount of coal per square foot of grate, the chimney being also 75 ft. high.

Then

$$A = \frac{(G \times C)\,0{\cdot}1}{\sqrt{H}} = \frac{(60 \times 20) \times 0{\cdot}1}{\sqrt{75}} = 13{\cdot}85 \text{ sq. ft.}$$

The advantage of using a rule such as the foregoing is that the flue area bears a definite relation to the chimney draught and fuel consumption, as well as to the grate area. The direct influence of these factors is clearly shown by the results of the two succeeding examples, calculated in accordance with the data assumed in Examples (1) and (2), except that the height of the chimney is altered to 100 ft. and the coal consumption to 15 lb. per sq. ft. of grate area.

Example (1*a*).—For one boiler the area of the main flue becomes

$$A = \frac{(20 \times 15) \times 0{\cdot}125}{10} = 3{\cdot}75 \text{ sq. ft.}$$

Example (2*a*).—For three boilers the area of the main flue becomes

$$A = \frac{(60 \times 15) \times 0{\cdot}1}{10} = 9 \text{ sq. ft.}$$

Having settled the area of the main flue in accordance with the proportions of the boiler, the height of the chimney-shaft, and the maximum coal consumption proposed, the shape can be adapted to suit the boiler setting and the building in which the plant has to be installed.

For very small flues fireclay pipes can be used with advantage, but the section most generally adopted in practice is a combination of the circular and rectangular forms, the flue being built with a horizontal floor, vertical sides, and an arched roof, as illustrated in Fig. 31, p. 236.

Wherever possible, the width of the flue should be enough to permit the passage of a man, and in fixing the height, allowance should be made for a few inches of soot and flue dust at the bottom.

For the flues calculated in the preceding examples any of the following dimensions would be suitable:—

Ex. No.	Round.	Square.	Rectangular.	Rectangular with Arch.
	ft. in.	ft. in.	ft. in. ft. in.	ft. in. ft. in.
1	3 0	2 9	1 9 × 4 0	1 9 × 4 3
1a	2 5	2 3	1 6 × 3 0	1 6 × 3 3
2	4 6	4 0	2 9 × 5 6	2 9 × 5 9
2a	3 9	3 3	2 3 × 4 6	2 3 × 4 9

In planning a main flue the shortest and most direct route should be taken to the chimney. All sudden bends and changes of direction must be avoided, and the interior surfaces should be smoothly finished. The flues leading from the boiler, or boilers, should be led into the main flue so that the gases are not required to pass over sharp corners of the brickwork, and care should be taken in every possible way to facilitate the passages of the gases to the chimney-shaft.

Provision for access should be made by fixing a manhole at some suitable point, and in small flues it is necessary to provide floors at all bends and elbows, so that soot and flue dust may be removed at intervals or whenever required.

Brick flues are built with a lining of firebrick set in fireclay. The outer masonry should be of hard brick, and thick enough to keep loss of heat by radiation within reasonable limits.

As the main flues of boilers sometimes extend for considerable distances, it is desirable that the influence of length should be thoroughly appreciated.

The loss of head due to friction at various velocities in flues of different diameters can be calculated by any reliable formula, although, of course, the exact amount of loss in any individual case will necessarily depend upon the original character of the interior surfaces and the extent to which the flues are choked and roughened by the presence of soot and dust.

Our present purpose will be served by employing an adaptation of the formula recommended by Mr. Hawksley* for the flow of water in pipes, and which experience shows may be used also for the flow of air in smooth pipes and other conduits. This formula is—

$$v = 48 \sqrt{\frac{h\,d}{l}} \quad \ldots\ldots\ldots\ldots (3)$$

where v = velocity in feet per second, h = head in feet of air, d = diameter in feet, and l = head in feet.

To make the rule applicable to cases where the head is expressed in inches of water, the coefficient 48 must be divided by $\sqrt{0{\cdot}0761 \frac{12}{62{\cdot}3}}$; 0·0761 being the weight of a cubic foot of air at 62 deg. F., 62·3 the weight of a cubic foot of water at the same temperature, and 12 the number of inches in a foot. Using round numbers, this gives

$$v = 396 \sqrt{\frac{h\,d}{l}} \quad \ldots\ldots\ldots\ldots (4)$$

and

$$h = \frac{v^2\,l}{156{,}800\,d} \quad \ldots\ldots\ldots\ldots (5)$$

Table XVII. has been calculated by formula (5) for flues of different diameters, all 100 ft. long. For greater lengths, the figures in the table must be increased proportionately with the length of the flue. Thus, for flues 200 ft. long the values should be multiplied by two, for 300 ft. long by three, and so on. It should be noted that, as Mr. Hawksley's formula refers to smooth pipes, the figures in this table represent comparative rather than actual losses of head in sooty flues.

To illustrate the use of the table, let us suppose that 64 cubic ft. of gases have to be discharged through a main flue at a velocity of 20 ft. per second. This discharge corresponds with an area of 3·2 sq. ft., or a diameter of about 2 ft. According to Table XVII., the loss of head for a velocity of 20 ft. per second in a flue of this diameter is 0·127 in. of water, but if the length were 600 ft. the loss would become (0·127 × 6) = 0·762 in. To avoid this excessive loss, the area of the flue could be increased, with a corresponding reduction of velocity. Making the flue diameter 3 ft. (area = say, 7 sq. ft.), the velocity would become about 9 ft. per second, and the loss of head rather less than (0·0212 × 6) = 0·1272 in. of water.

The importance of proportioning flues in this manner will be recognised when it is remembered that the loss of head due to friction in a long flue has to be made good by increasing the draught power of the chimney. For lengths up to 100 ft. the rules already given may be taken as allowing sufficient area, but when the length is above this limit, compensation should be made by increasing the area of the flue. Table XVII. is only calculated for a few diameters and velocities, but our readers can easily prepare a more extended table by the aid of formula (5).

* *Proceedings* of the Institution of Civil Engineers, vol. xxxiii.

For application to passages of irregular outline formulæ (4) and (5) must be modified by the addition of factors representing area and perimeter, but can be used without alteration for conduits of rectangular section, as the relation of area to perimeter for such is the same as for circular sections.

Mention has already been made of the advantages to be derived from the use of fuel economisers. As apparatus of the kind is fixed in or in connexion with the main flue of a boiler or range of boilers, we now describe and illustrate some of the different ways in which economisers may be connected.

Fig. 53 contains cross and longitudinal sections of the brickwork for a Green's economiser. These drawings are sufficiently clear, and require no explanation.

Fig. 54 is a section illustrating a simple arrangement for the installation of an economiser behind a Cornish boiler.

Fig. 55 shows a somewhat similar arrangement applied in connexion with a watertube boiler where the main flue passes below the floor level.

Fig. 56 is a section showing the economiser placed above the main flue leading from one or more boilers to the chimney. As shown in this drawing, the reserve flue is closed by a damper, and the flues leading to and from the economiser are provided with wing dampers. Thus the gases can be made to pass either through the economiser or the reserve flue as required. At times when the economiser has to be shut down for examination, cleaning, or repair, the reserve flue is used, so that no interference with the operation of the boilers shall be caused.

Fig. 57 shows the arrangement of an economiser for three Lancashire boilers. Two openings are provided from the main flue—one giving access through the economiser to the chimney and a reserve flue affording direct connexion with the chimney.

Although the economiser is usually fixed in one or other of the positions shown by the illustrations, there is no limit to the variations open to the designer, and it is quite easy to arrange the apparatus to suit every kind of boiler and to comply with any structural requirements in new or existing buildings.

As in the case of boiler setting, the brickwork of an economiser should be designed so as to facilitate access to the flues, and for this reason the adoption of removable flue covers, as shown in Figs. 53-55, are preferable to brick corbelling. Contact of brickwork with the apparatus should also be minimised by employing blocks of semi-circular section in place of ordinary bricks.

DISCOVERY OF AN UNDERGROUND PASSAGE.—According to an account in the *Yorkshire Post*, during some excavations at Dewsbury the opening has been found of a secret passage which extended from the Manor House gardens, opposite the Town Hall, across what is now Leeds-road, beneath Manor-place gardens, and (it is believed) beneath the dwelling to a house known as the "Haunted House." Manor House formerly belonged to Mr. John Peables, and his gardens, noted for their extent and beauty, included in their limits the so-called Haunted House, and this passage is believed to have been built as affording a means of escape in case Manor House was besieged by the Parliamentarians. If this surmise is correct, it forms rather an interesting justification of the incidents imagined by Scott in "Kenilworth," where the coming and going of people through secret passages led to the inference that the house was haunted.

TABLE XVII.—COMPARATIVE LOSSES OF HEAD DUE TO FRICTION IN LONG FLUES.

(Calculated in inches of water for circular flues 100 ft. long.)

Diameter of Flue.	Velocities in Ft. per Second.					
	5 ft.	10 ft.	15 ft.	20 ft.	25 ft.	30 ft.
Ft. in.	in.	in.	in.	in.	in.	in.
1 0	0·0159	0·0637	0·143	0·255	0·398	0·574
1 6	0·0106	0·0425	0·095	0·170	0·265	0·382
2 0	0·0079	0·0318	0·071	0·127	0·199	0·287
2 6	0·0063	0·0255	0·057	0·102	0·159	0·229
3 0	0·0053	0·0212	0·047	0·085	0·132	0·191
3 6	0·0045	0·0182	0·041	0·072	0·113	0·164
4 0	0·0039	0·0159	0·035	0·063	0·099	0·143
4 6	0·0035	0·0141	0·031	0·056	0·088	0·128
5 0	0·0031	0·0127	0·028	0·051	0·079	0·114
5 6	0·0028	0·0116	0·026	0·046	0·072	0·104

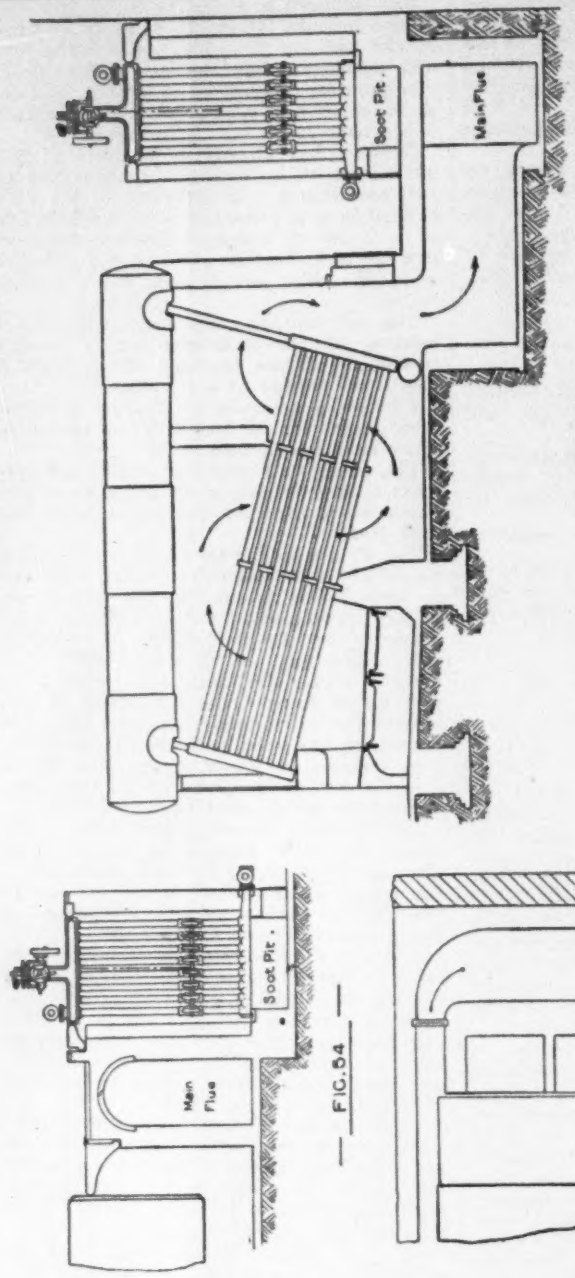


FIG. 55.

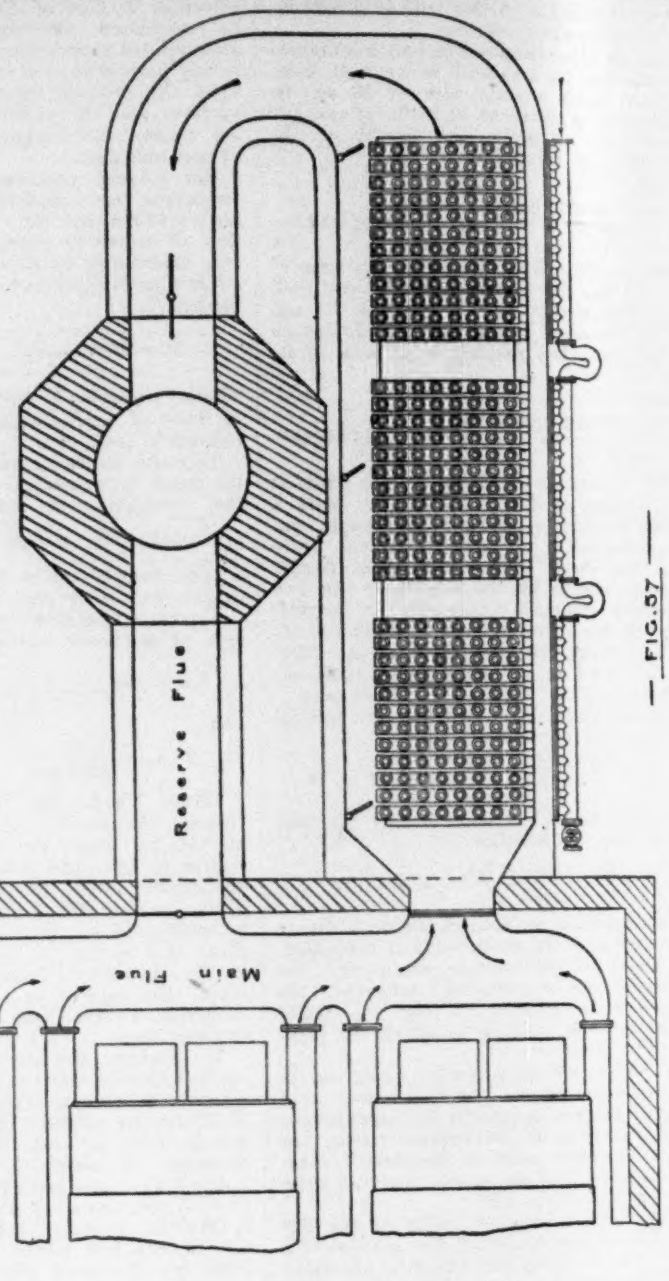


FIG. 57.

FIG. 54.

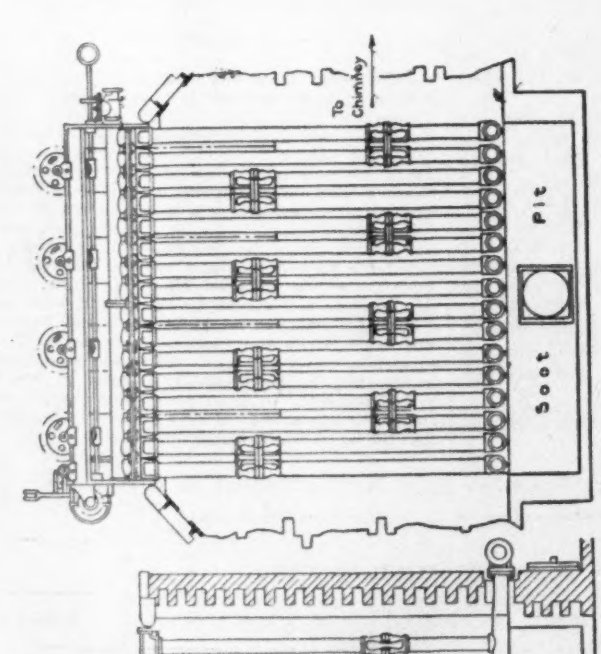


FIG. 53.

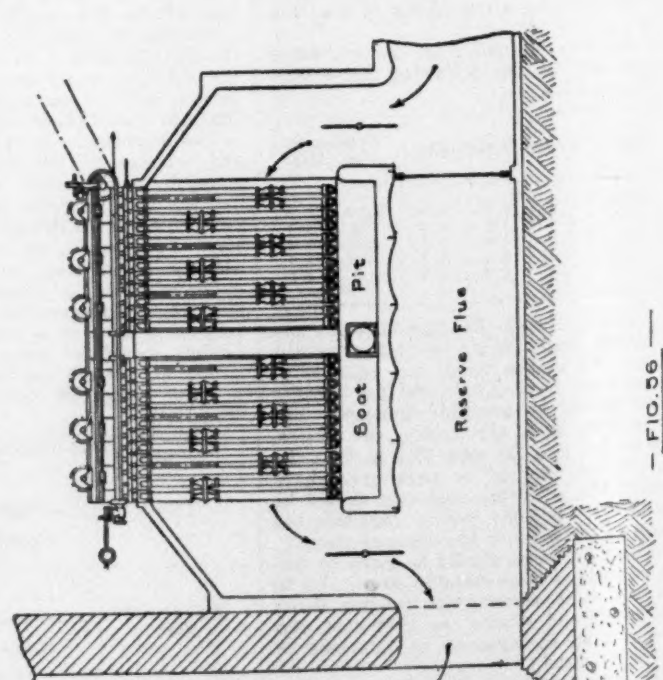


FIG. 56.

Illustrations to Student's Column. (*See page 301*).

OBITUARY.

MR. KNIGHTLEY.—We have to record the death on September 4, at Eastbourne, of Mr. Thomas Edward Knightley, in his eighty-second year, senior partner of the firm of Messrs. Knightley & Batterbury, of No. 106, Cannon-street, E.C., and Birkbeck Bank-chambers, High Holborn. Mr. Knightley was elected an Associate in 1856, and in 1860 a Fellow, of the Royal Institute of British Architects. He was during a term of forty-eight years district surveyor for Hammersmith, and resigned the appointment as from June 30, 1904. In July, 1901, he took into partnership his former pupil, Mr. Thomas Batterbury, F.R.I.B.A., district surveyor for Plumstead and Eltham; another of his pupils was the late Mr. Blashill. Of Mr. Knightley's architectural works we have illustrated, with drawings and plans, the Cavendish Hotel, Eastbourne (August 11, 1866); "The Quarry," built in 1867-8 on the Kippington estate, near Sevenoaks, for Mr. A. Swanzy (August 28, 1869); Nos. 30-1-2, Fleet-street and Falcon-court for the London branch of Messrs. Philip, of Liverpool, map-sellers (October 27, 1883); No. 321, Strand, for Mrs. S. S. Torrie—the house, facing the porch of St. Mary-le-Strand Church, has lately been pulled down for the Strand to High Holborn improvements (February 7, 1885); and the Queen's Hall, Langham-place, W. (February 14, 1891, exterior and interior views). As regards the last-named building, we should state that a controversy as to the authorship of the design which arose between Mr. Knightley and the late Mr. C. J. Phipps was referred for adjudication to Mr. J. Macvicar Anderson, the terms of whose award were published in the *Builder* of December 30, 1893. Mr. Anderson adjudged that, subject to a few variations, the building had been erected from plans, as distinguished from elevations and sections, designed by Phipps, and that the design of the exterior and interior in other respects was due to Mr. Knightley, under whose sole superintendence the building was carried out. Mr. Knightley was the architect of the additions, with aisles and galleries, to the Church of All Saints', Haggerston, by Hardwick the younger; of the rebuilding, after the fire on December 18, 1859, of the Church of St. Matthew, Bethnal Green, by Dance the elder; as architect during fifty-four years, until his resignation in December last, to the Edmonton Union Board of Guardians—the new offices and board-room, the infirmary at the workhouse in Union-road; the meat stores, building-stores, and reading-rooms at the Chase Farm Schools, Enfield; the new chapel, enlargement of the maternity and imbecile wards, electric bed-lift, chimney-shaft, and underground flues, with sanitary works, and other alterations and improvements at the workhouses at Chase-side, Enfield, and Upper Edmonton; the Commercial Travellers' Schools, Pinner; and Bakers's Almshouses, Leyton. He also prepared the plans and designs of the offices in Basinghall-street, E.C., for the (late) Commissioners of Sewers, 1898; and in 1896-9 of the new premises for the Birkbeck Bank in Southampton-buildings, W.C., together with the extension of the block northwards and eastwards, with frontages to High Holborn and Staple-inn respectively; the Congregational Church, Southgate-road, De Beauvoir Town; Shoreditch New Almshouses, Brunswick-street; several blocks of warehouses in Milton-street, City-avenue, Leonard-street, Finsbury, and the vicinity; shops and offices in Aldersgate-street, corner of Jewin-street; No. 79, City-road; Nos. 149-151, Cannon-street, and Nicholas-lane; Messrs. Brown, Janson, & Co.'s Bank, Abchurch-lane; the East Indian Railway Company's offices, Nicholas-lane; City Soap Works, Moorfields; model dwellings in Norton Folgate and Finsbury; Nos. 93-4, Chancery-lane; and the Birkbeck Schools, Kingsland. Mr. Knightley was appointed honorary surveyor to the Committee for the addition of 43 acres to Brockwell Park, Herne Hill and Brixton. In 1862 he produced a large [illegible] volume entitled "Stable Architecture." Having served his articles to Mr. Waller, of Ironmonger-lane, he began practise in Gough-square, Fleet-street, and removed thence to 106, Cannon-street, fifty-two years ago. He was appointed surveyor to the Birkbeck Building Society upon its foundation in 1851, and continued to hold that appointment until the time of his decease. Mr. Knightley was awarded premiums for his designs in the City of London School, and the Metropolitan Meat Market and Vegetable Market, West Smithfield, competitions.

GENERAL BUILDING NEWS.

CATHOLIC CHURCH, THATTO HEATH.—The foundation stone has just been laid of the new church of St. Austin at Thatto Heath, near St. Helens. The new church, which replaces the old school chapel in use for the past eleven years, is being erected by Messrs. Thomas Welsby & Sons, Rainhill, from the designs of Messrs. R. Curran & Sons, Warrington, Mr. E. Quirke being the clerk of works. The building will accommodate about 450 people, being 110 ft. long, 39 ft. wide, and about 40 ft. high. At the east end will be the sanctuary and two side altars, and the building will have a red stone front, extended porches, and floriated windows. The cost of the fabric, exclusive of furnishing, will be 2,500*l*.

CORHAMPTON CHURCH, HANTS.—The ancient parish church of Corhampton, near Bishop's Waltham, Hants, is now closed for repairs. The work, which will involve an expenditure of about 1,000*l*., is being carried out under the direction of Mr. T. G. Jackson, R.A.

NORTH UNITED FREE CHURCH, ABERDEEN.—The opening of this church took place on the 8th inst. The building is seated for 1,200 worshippers. The planning of the work was entrusted to Mr. W. E. Gauld, architect, and the contractors were as follows:—Mason, Mr. Edgar Gauld; carpenters, Messrs. Henry & Keith; painters, Messrs. A. Ferguson & Co.; plumber, Mr. A. B. Robertson; plasterers, Messrs. Bannochie & Sons; slater, Mr. Geo. Farquhar; electric lighting, Messrs. Claud Hamilton & Co.; engineering ironwork, Messrs. M'Kinnon & Co.; engine-room, Messrs. Abernethy & Co. The cost has been a little over 12,000*l*.

BARKING BAPTIST TABERNACLE.—The interior of this building is being entirely remodelled, galleries being added, and the whole reseated, also a handsome new ceiling and arcade carrying same has been introduced. The contract is let to Messrs. Sands & Burley, Longfellow-road, Walthamstow, the amount being 1,745*l*. The architects are Messrs. George Baines & Son, London.

COUNCIL SCHOOL, LLANDUDNO.—The new Dyffryn-road Council School, Llandudno, has just been opened. The building consists of an assembly hall, five classrooms, cloakroom, and lavatories, headmaster's-room, etc., designed, on the hall passage system of planning, by Mr. G. A. Humphreys, architect, of Llandudno, the contractor being Mr. Edward Owen.

SCHOOLS, COVENTRY.—The new schools and adjuncts in Swan-lane, Coventry, provide accommodation for 1,336 children, and the inclusive cost of the scheme is between 19,000*l*. and 20,000*l*. In addition to the classrooms, there are separate blocks for instruction in cookery, laundry work, and manual training. The schools proper give accommodation for 1,224. There are two—mixed providing for 808 and infants for 416, and both are of one story. The mixed school has fourteen classrooms, with a central hall 87 ft. by 36 ft., and the infants' seven, with a central hall 52 ft. by 30 ft. The architects for the work were Messrs. G. & I. Steane, the contractor being Mr. Charles Hope, of Berkswell.

THURLESTONE CHURCH SCHOOLS.—The Bishop of Exeter (Dr. Robertson) opened the new Church schools at Thurlestone, near Kingsbridge, on the 31st ult. The buildings have been erected by Mr. W. S. Smith, of Kingsbridge, from plans prepared by Mr. W. Rowell, architect, of Newton Abbot, and they stand on the glebe land, near the sea, overlooking Bigbury Bay. The interior is a classroom divided by a movable glass partition from the main school, and has cloakroom and other accommodation.

SUNDAY SCHOOL AND CHURCH INSTITUTE, AINSTABLE.—On the 6th inst. the Bishop of Carlisle laid the foundation-stone of a new Sunday school and church institute which is being built at Ainstable. The building was planned by Mr. C. M. Wilford, architect, and the contractors are Messrs. Laing & Son, builders, Carlisle, and Mr. Foxcroft, joiner, Hayclose. The structure is being erected with red sandstone, and will consist of two rooms, one 45 by 23 ft. and the other 16 by 10 ft. It will be capable of accommodating about 200 people.

CHURCH HALL, BLAENAU FESTINIOG.—The foundation-stones were recently laid of a new church hall which is being erected at Blaenau Festiniog. The building when completed will measure 52 ft. by 30 ft., and will seat about 320 persons. There will also be a committee-room measuring 19 ft. by 20 ft., with cellar underneath, as well as a store-room. The work will be carried out in stone, lined with glazed bricks, and when completed will entail an expenditure of from 1,200*l*. to 1,300*l*. The architect is Mr. Thomas Jones, and the contractor Mr. David Jones, of Festiniog.

PROPOSED WESLEYAN CENTRAL HALL, SHEFFIELD.—The Wesleyans at Sheffield have on hand an extensive scheme, including the erection of a central hall and buildings to cost about 40,000*l*. It is proposed to pull down Norfolk-street Chapel and the adjoining buildings in George-street, and on the site to put up a hall to accommodate 2,350 people, with smaller halls, vestries, etc. The structure will be in the Renaissance style, from the designs of Messrs. Waddington, Son, & Dunkerley, of Manchester.

HOSPITAL, NEWBURN.—In addition to the particulars given in our issue for last week under this heading, the sub-contractors are as follows:—Plasterer, Mr. Turton, Whitley Bay; plumber, Mr. F. W. Jefferson, Hexham and Ryton; painter and glazier, Mr. M. J. Rutter, Lemington; electrician, Mr. J. J. Oliver, Gateshead; heating apparatus, Messrs. Emley & Sons, Ltd., and Messrs. Shorland Brothers; laundry appliances, Messrs. T. Bradford & Co., Manchester; ambulance van, Messrs. Charles Foot & Sons, North Shields; furnishing, etc., Messrs. James Coxon & Co., Newcastle. The clerk of works for the committee was Mr. M. D. Gladders, of Newcastle. The whole (including furnishing), as already stated, has been designed and carried out by Mr. Thomas Gregory, of Newburn.

SANATORIUM EXTENSION, BRENT.—On the 8th inst. the Earl of Mount Edgcumbe opened the new wing of the Devon and Cornwall Sanatorium for Consumptives at Didworthy, Brent. The building is of two stories, and in each will be five rooms 14 ft. by 14 ft. Each room provides accommodation for two patients. The whole of the outer walls are of stone, the inner walls being of brick. The work has been carried out by Mr. D. Carwithen, of Plymouth, and to Mr. Daniel Ward, architect and surveyor, of Plymouth, was entrusted the supervision.

WORKHOUSE EXTENSION, SHARDLOW.—A new board-room has recently been opened at the Shardlow Workhouse. The room is a part of the workhouse extension scheme which is being carried out under the direction of Messrs. Naylor & Sale, architects, at a cost of about 13,000*l*. to 14,000*l*. A raised platform runs across the entire length of one end of the room, whilst the floor is inlet with wooden blocks. Telephonic communication is installed between the board-room and the adjoining offices, which comprise committee-rooms and clerk's offices, the general construction of which is similar to that of the board-room. New lavatories also adjoin the corridors leading to the main building.

PUBLIC LIBRARY, MARYHILL, GLASGOW.—A new public library was opened at Maryhill on the 4th inst. The building was designed by Mr. James Rhind, of Glasgow.

THEATRE, CARLISLE.—Work has been commenced on the new Palace Theatre at Carlisle. The building will be situated at the back of the Arcade in Botchergate, and the entrance to the grand circle will be through the arcade, the pit and gallery entrances being situated in King-street. When completed the structure will provide accommodation for nearly 2,000 people, and will cost over 10,000*l*. The architects are Messrs. Owen & Ward, Birmingham, and the resident architect, representing the Palace Theatre Syndicate, is Mr. W. P. Gibbings. The contract for the structural portion of the work has been let to Mr. G. Black, joiner, Carlisle, with Messrs. J. & R. Bell as sub-contractors for the brickwork, Mr. Ormerod for the plastering, Mr. Hewitson for the slating, and Messrs. Graham & Crawford for the plumbing, Messrs. Hill & Son being the painters and glaziers.

UNIVERSITY OF WALES.—The tender of Messrs. Turner & Sons, at 13,422*l*., has been accepted for the new buildings of the South Wales and Monmouthshire University College, to be erected in Cathays Park, Cardiff, after plans and designs by Mr. W. D. Caröe.

AVENUE THEATRE, NORTHUMBERLAND-AVENUE.—Mr. Cyril Maude has appointed Messrs. Detmar Blow & Billery as architects for the reconstruction of the Avenue Theatre, and an entire remodelling of the interior, with a decorative scheme in brown and gold, as suggested by Mr. Mortimer Menpes. The theatre was built in 1881-2, after plans and designs by Mr. F. Fowler, and accommodated an audience of about 1,000 persons.

NEW PLACES OF ENTERTAINMENT, LONDON.—It is announced that schemes are being formulated for the building of two theatres, with shops and a roof garden, upon the site, near Wardour-street, on the northern side of Shaftesbury-avenue, and that Mr. Bertie Crewe is appointed architect of a proposed palace of varieties, to be erected near the Opera House, Covent Garden, which will comprise a theatre, having an auditorium with 4,000 seats, two concert halls, exhibition buildings having an aggregate area of 64,000 ft. superficial, and a large winter garden.

PUBLIC BUILDINGS, STORNOWAY, N.B.—Lord Rosebery visited Stornoway on the 7th inst. for the purpose of opening the suite of public buildings which have just been built on the front overlooking the bay. The buildings have been erected from plans by Mr. John Robertson, Inverness. Forming practically a square, they have a street frontage on three sides. The materials used were red sandstone from Loch Broom, with white freestone facings from the Island of Eday, in Orkney. The style is a free treatment of Gothic and Elizabethan. The structure is in three sections, with a triple roof. In the centre is a hall, 98 ft. long by 34 ft. wide, giving accommodation for 800 people. To the top of the walls the height is 32 ft., and the heavily-timbered roof is carried 15 ft. higher. Lighting is obtained from the roof and from two windows, one in either end. Facing South Beach-street and overlooking the harbour are the rooms for the Social Institute, while in the frontage towards Point-street the principal section of the building is the library. This is accommodated in two apartments, one on the ground and the other on the first floor. In the Town Hall the pillars between the wall panels are embellished with representations of the coats of arms and shields of the Stornoway trade

incorporations. The erection of the buildings was carried out under the supervision of Mr. Alexander Macdonald, the Burgh Engineer. The cost of the work has been 11,000*l.*

CENTRAL BATHS, BRADFORD.—On Wednesday last the new central baths in Morley-street, Bradford, were opened. The principal accommodation provided consists of a swimming bath and a series of slipper, douche, and medicated baths, with Turkish and Russian baths. The hall containing the swimming bath is 130 ft. long and 60 ft. wide, and the bath itself is 100 ft. by 30 ft., the depth varying from 3 ft. 6 in. to 7 ft. The hall is surrounded by a gallery, which has seating accommodation for 380 persons, and a promenade capable of holding 300 persons. The old style of dressing-boxes has been abandoned, and a special apartment has been provided for dressing-rooms. The hall, when used for meetings in the winter, will provide seating accommodation for 860 persons, or for 1,540 when the galleries are occupied. The partitions for dressing-boxes are removable, and will be taken down during the winter, leaving a room 55 ft. 6 in. by 30 ft. 9 in. available for other purposes. The laundry connected with the establishment is capable of dealing with 800 towels per hour. The machinery is driven by a 10-h.p. motor, the current being derived from the Corporation mains. There are two washing, boiling, and disinfecting machines, two 26-in. friction-driven self-balanced hydro-extractors, a drying chamber with twenty-three sliding racks, and one 108-in. ironing machine. The buildings are ventilated on the "plenum" system. For heating the water for the baths there are two Lancashire boilers, working in conjunction with a Green's economiser. The pumps for feeding the boilers are connected with a Chevalet heater. The swimming hall is lighted with "Lucas" gas lamps, while electricity is adopted for the Turkish, Russian, medicated, and special baths. A house for the manager is provided over the entrance in Great Horton-road. On the other side of the building, between the swimming bath and Morley-street, a space was left for the erection of eight lock-up shops with storerooms over. The Turkish baths are situated in the lower ground floor. There are three hot-rooms, 36 ft. by 13 ft., 21 ft. 9 in. by 13 ft., and 13 ft. 6 in. by 8 ft. 6 in. respectively. A plunge bath, 30 ft. by 10 ft., has also been provided. The shampooing-room is 20 ft. 9 in. by 13 ft., and is fitted with three fixed marble shampooing slabs, a portable slab for occasional use, and a needle and a sitz bath. There are also two cooling-rooms. In addition to the baths already mentioned, there are twelve slipper baths for men and four for women. The contractors for the various works have been as follow:—Excavator, mason, and bricklayer, Mr. Walter Booth; carpenters and joiners, Messrs. Jackson Bros.; plumbers and glaziers, Messrs. H. Braithwaite & Co.; plasterers and concreters, Messrs. B. Dixon & Son; slaters, Messrs. Hill & Nelson; painter, Mr. Walker Priestley; ironfounders and smiths, Messrs. J. Hitchen & Son; electric lighting, Mr. C. W. Webster; gas lighting, Messrs. Atkinson & Smith; steam boilers, Messrs. Hewitt & Kellett; heating and ventilating, the Lancashire Heating Co.; laundry fittings, Messrs. W. Summerscales & Sons, Ltd. The preparations of plans was first entrusted to Mr. A. Hessell Tiltman, of London, and modifications were subsequently made by Mr. F. E. P. Edwards, City architect, who was entrusted with the supervision of the work of construction. The cost amounts to about 7,000*l.*

SANITARY AND ENGINEERING NEWS.

RESERVOIR, DOUGLAS.—The opening of the West Baldwin Reservoir took place on the 6th inst. The scheme was designed by Messrs. G. H. Hill & Sons, of London and Manchester, and carried out under the management of Mr. F. Thorpe. The total cost has been 90,000*l.*

WATER SUPPLY, CHELMSFORD.—The new reservoir at Long Stomps, which provides Chelmsford with an improved supply of water, has just been opened. The site is 200 ft. by 200 ft., and the area of the top of the reservoir is 1,385 sq. yds. The outer walls are composed of concrete, and are 6 ft. thick at the bottom and an average of 12 ft. high, with an inner lining of 6 in. of concrete, the whole being rendered with ½ in. of cement rendering and finished on top with ¼ in. of neat cement. The floor is composed of concrete, and is 18 in. to 21 in. thick, according to the nature of the subsoil, and an extra 6 in. under each brick pier, and is rendered in a similar manner to the walls. The roof is supported by ninety-five blue brick piers, 18 in. square, varying in height from 10 ft. 4 in. to 11 ft. 6 in., each pier standing on a Yorkshire stone base from Pateley Bridge. The piers carry 10-in. by 5-in. steel girders, which weigh in all 21 tons, and carry the concrete roof, in which is embedded the New Expanded Metal Co.'s steel sheeting. The ventilation is obtained by twenty-six Greegen patent ventilators, and three manholes are provided for access to the interior. A Venturi meter has been fixed on the 10-in. delivery main. A valve house has been built, enclosing the valve to the outlet pipe and electrical transmitter. The bricks are of local manufacture, with stone dressings, and the borough arms are over the entrance doorway. The capacity of the new reservoir is 716,000 gallons. A new 10-in. pumping main extends from Mildmay-road pumping-station to the new reservoir, and is 2,300 yds. in length. The contract for the reservoir amounted to 4,777*l.*, and the pumping main to 1,852*l.*, making a total of 6,629*l.* The contractors were Messrs. Potter & Sons, Chelmsford, and the pumping main was laid by the Council's own staff. The cement rendering on the inside of the reservoir was done by Mr. G. T. Bedingfield, plasterer, of Chelmsford. The cement was supplied by the Associated Cement Manufacturers, of Grays; the blue bricks by Messrs. Wragg & Co., of Swadlincote; the steel girders by Messrs. Dorman, Long, & Co., of Middlesbrough; the special fittings and valves by Messrs. Glenfield & Kennedy, and the Venturi meter and electrical recorder by Messrs. Kent & Co., of London. The whole of the reservoir is lined with Callender's bituminous sheeting. Mr. Cuthbert Brown, the Borough Surveyor, was responsible for the scheme, and the clerk of the works was Mr. E. Mansbridge.

ELECTRIC LIGHTING AND DESTRUCTOR WORKS, BURSLEM.—The opening of the new electric lighting and destructor works which have been erected at Burslem took place on the 5th inst. The buildings have been erected under the direction of the Borough Surveyor (Mr. F. Bettany), and the whole of the engineering work has been under the control of the Borough Electrical Engineer (Mr. Bremner). The buildings have been designed so that the steam generated in the destructor boiler is utilised to generate electricity. They consist of a destructor-house, boiler-house, engine-room, offices, test-room, and battery-room, and the smoke and gases from the boilers are carried away by an octagonal chimney-shaft 120 ft. above ground level. The building contractors were Messrs. W. Grant & Son, Burslem. The refuse destructor, which was supplied by Messrs. Henan & Froude, Ltd., Manchester, is of the three-cell front feed type, and is capable of burning 50 tons of refuse in eighteen hours to a hard clinker. The total cost of the electricity works was 19,000*l.* and the destructor works 4,000*l.*

FOREIGN.

FRANCE.—A monument to the memory of Fromentin, the painter, is to be inaugurated at la Rochelle on October 1.——The Departmental Council of la Nievrè have decided on the erection of a bridge in ferro-concrete over the Nievrè, at a cost of 340,000 francs.——The Municipality of Nancy have passed a vote for 450,000 francs for the enlargement of the Lycée for girls in that town.——A hospital is to be built at Roubaix at a cost of 400,000 francs.——A statue of Vauban, the work of M. Guillot, was inaugurated last Sunday at Saint Léger-Vauban (Yonne).——Twelve competitors entered for the competition opened by the "Société Nationale des Architectes de France," for a design for the offices of a daily paper. The prize was awarded to M. Dangla.——The Conseil des Ministres have decided that the Colonial Office should be transferred to the building in the Rue Oudinot now occupied by the "Frères de la Doctrine Chrétienne," and in exchange for this the Municipality of Paris is to have possession of the Caserne Napoléon, Place Lobau, which will become an annexe of the Hôtel de Ville.——A normal school for girls is to be built in the Parc Glatigny, Versailles, at a cost of 1,026,000 francs.——It is reported that the municipality of Lorient intend to demolish the old Morbihan gate at the entry to the town.——The death is announced, at the age of 93, of the marine painter François Bernard Barry, pupil of Gudin. He had received medals in the Salons of 1840 and 1843, and was Chevalier of the Legion of Honour. He painted several views of Marseilles, his native town, and some other important pictures, among which was that representing the arrival of the Queen of England at Tréport, in 1843. The museums of Versailles, Lyons, and Marseilles, possess various examples of his work. He exhibited regularly at the annual Salons down to 1882, his last work exhibited there being "The Taking of Sfax."——The death is also announced, at the age of 74, of M. Alphée Dubois, the medal engraver; son of another celebrated medallist, Eugène Dubois. Alphée Dubois had been a pupil of Duret and of Barré, and obtained the Prix de Rome in 1855. His works are remarkable both for originality of conception and finish of execution. Among the principal ones may be mentioned the Napoléon Centenary Medal; the portrait of Napoléon III.; the bronze money for the kingdom of Spain; and the medal commemorating the building of the Mairie of the Xth arrondissement. He obtained a silver medal at the 1889 exhibition.——The death is also announced, at the age of 76, of M. André Delorme, the sculptor, a former pupil of Bonnassieux, who obtained the Second Prix de Rome in 1857. His best work, "Mercury," is in the museum at Lyons. He received medals at the Salons of 1861, 1863, and 1889, and also in 1900 Exhibition.

SOUTH AFRICA.—At East London the traces of the great fire of November, 1902, are now rapidly becoming obliterated.——At Mossel Bay the R.C. Church and Berlin Mission Church are undergoing alterations and enlargement; St. Peter's will soon have a chancel and spire added, and it is expected the Wesleyans will soon call for tenders for the erection of a chapel; there is talk of a new prison, boys' public school, and hospital. ——A satisfactory arrangement has now been entered into between the Pretoria Master Builders' Association and the carpenters and joiners of the town, who have been out on strike. The arrangement agreed upon provides that the men shall return to work at a wage of 2s. 6d. per hour, instead of at the higher wages of 2s. 8½d. per hour as paid formerly, and that the whole question—the dispute about wages—be referred to arbitration. The men, on this basis, have returned to work, and the masters have further agreed that should the arbitrator, after hearing both sides, give his award in favour of the 2s. 8½d. per hour, they will pay that wages as from the date of the men resuming work.——A considerable amount of building was carried on in and around Johannesburg during June, no fewer than 613 erections, including 176 dwellings, 44 additions, 199 rooms, and 47 stores, shops, and offices being approved by the municipality. These were all erected within a radius of six miles of the Market-square, the majority of them in the suburbs.——At a meeting of the Durban Master Builders' Association final measures were taken for the creation of a Building Trades Conciliation Board, which consists of four representatives each of masters and men. The scheme was inaugurated by Mr. W. R. Poynton, Durban, President of the National Association of South African Builders. The board will deal with all trade disputes occurring as from July 31.——At Port Elizabeth the death has occurred of Mr. Robert Garrett Ablett, in his seventy-second year. Mr. Ablett arrived there in 1843; he was a successful architect and building contractor. Amongst the buildings erected by him are the Union-Castle Company chambers and the Roman Catholic Church.——In connexion with the competitive designs for the new public schools at Mowbray, which are estimated to cost 30,000*l.* to erect, the first premium has been awarded to Messrs. McGillray & Grant, and the second premium to Mr. William Black & Mr. Herbert Black, architects, of Standard Bank, Johannesburg.

NATAL.—The contract for the new town hall, public buildings, and municipal offices for the Municipality of Durban has been signed, and the contractors have now commenced the excavations. The accepted tender amounted to 237,945*l.*, which provides for the external elevations being faced up to the first floor level with local stone, the remainder to be finished in cement plaster. Provision is made, however, in the agreement to proceed with the whole of the elevations in local stone should the Council decide at a later date to do so, in which case the total cost of the work would be increased to 320,000*l.* The architects are Messrs. Scott & Hudson, of Johannesburg and Durban.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. W. H. Ansell, architect, has removed his office from 11, Great James'-street to 18, Guilford-street, Russell-square, W.C.——Messrs. Moffatt & Co., constructing engineers, have removed their works from Green-street, Blackfriars, to Eagle Works, 328, St. James'-road, Old Kent-road, S.E.——Since the death on the 21st ult. of Mr. Joseph Howe, the head of the firm of Messrs. Joseph Howe & Co., contractors, West Hartlepool (see Obituary notice in our issue of August 26), his executors have arranged to carry on the firm under its old title, retaining the present staff, with Mr. William Black as manager.

OLD SQUARE, LINCOLN'S-INN.—Since the demolition some years ago of the Vice-Chancellors' two Courts, an unsightly and inconvenient structure, their site has formed the gravelled area on the east side of the old Hall. The ground is now being dug up in order that it may be turfed and planted, and kerbed, room being left for the passage of vehicles, as in the adjoining New Square on the other side of the Chapel. This will be an improvement of the former arid waste and will enhance the view seen through the gateway in Chancery-lane.

ORDNANCE SURVEY, 1904-5.—The report for the twelve months ended on March 31 last, states that, whilst much attention has been bestowed upon the preparation and issue of small-scale maps, good progress is being made with those to the larger scales. The completed series now include the one-millionth scale map, in colours, for all of the United Kingdom; the county and district surveys, with main roads coloured, for the whole of Great Britain; the outline 4-mile maps, and the 1-in. outline and hill editions, for all of the United Kingdom; and the 1-in. coloured edition for England and Wales. Series in progress comprise the 1-in. coloured editions for Scotland and Ireland; the 2-in. survey, of which the drawing for England and Wales is

completed and the drawing for Scotland is in hand, whilst the maps to that scale for the south and west of England and parts of the Midland counties are published; the 10-mile map, coloured, is published for Great Britain and is nearly finished for Ireland. Amongst the special maps which have been undertaken are some for the reports of the London Traffic Commission, and to illustrate the history of the South African War, 1899-1902. During the official year many maps especially printed for the purpose were sold at nominal prices—and conditionally upon their use for educational objects only—to school authorities, at the prompting of the Geographical Association. A large number of men are being trained as topographical surveyors for the proposed survey of South Africa.

A DESERTED VILLAGE FOR SALE.—One curious sight near London, that of the deserted village of Lonesome, may soon be removed, for a new notice board has just been erected indicating that "this land is to be let on building lease." This deserted village has existed for some forty years, but its existence is not generally known. Its situation is at the bottom of Greyhound-lane, Streatham, and no village could be more desirably placed, it being surrounded by the most beautiful scenery. The village comprises ten detached dwellings. One only is tenanted, the remainder being in an advanced state of decay. Roofs and walls which have not gone are going, and gigantic trees have sent forth branches into bedroom windows, whilst blackberry bushes are forcing their way into dining-rooms and kitchens. Originally the main road was sewered and made up, but now it is covered with grass and luxuriant weeds. Some of the houses have never been occupied. The village was a failure from the beginning, for the few people who did settle there soon fled. The owner recognised that his speculation was a bad one and simply left the village to fall to pieces. Now the houses are rapidly collapsing, and sightseers are warned to keep away from the dangerous structures.

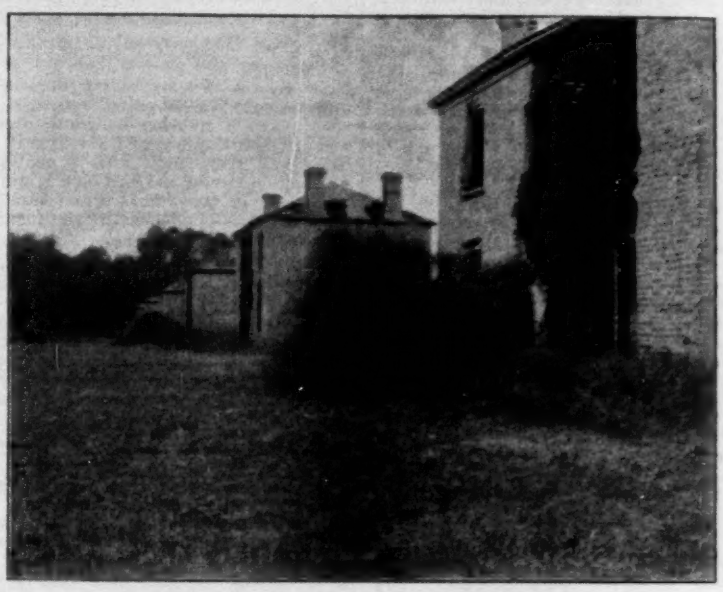
THE THAMES AND ELECTRICITY.—It is stated that the Board of Trade have sanctioned the conversion of the water-mill at Whitchurch into a generating station for the supply of electrical current for lighting and other purposes, including the recharging of motor boats and launches, the motive power of the station being derived from a wheel driven by the stream.

LIVERPOOL CATHEDRAL.—The work in preparing the foundations of the Liverpool Cathedral is reported to be proceeding satisfactorily. The excavations have been completed for the western tower, and it is expected that the whole foundations will be completed by March, and the erection of the Lady Chapel and Chapter house will then be proceeded with.

WAR MEMORIAL, LIVERPOOL.—On the 9th inst. Sir George White unveiled the monument erected in St. John's Gardens to the officers and men of the King's (Liverpool) Regiment who fell in the campaigns of Afghanistan, Burmah, and South Africa. The monument is composed centrally of a pedestal, upon which stands a figure of Britannia. The pedestal is flanked by a lower wall, or parapet, against which stand at either corner two soldiers. Upon a sloping step at the foot of the central pedestal are heaped military accoutrements of various kinds and periods, intermingled with wreaths and palms and covered with the Union Jack. At the back of the pedestal is seated, upon a ruined earthwork, a drummer-boy of the period of the Battle of Dettingen, beating a call to arms. Upon the front of the pedestal is the inscription, and on either side of it, upon the flanking wall, the names of those who have died in the more recent campaigns. Upon the back of the pedestal and the flanking wall are figured the badges and honours of the regiment. Upon the plinth in the front of the accoutrements and flag is the regimental motto, and at the back of the plinth the crest and motto of the City of Liverpool. Britannia stands with her right arm upraised in the act of blessing. She is armed with the weapons of defence alone. Upon her left arm hangs a shield, and in her left hand she holds a spray of laurel. The shield is decorated with sea horses, and the helmet with a prow and galleys and a sea-horse crest, all suggestive of maritime power. The soldiers on either side stand at ease, with their muskets lightly held. The total height of the monument is about 26 ft., and the width 25 ft. The sculpture, the work of Mr. W. Goscombe John, is all of bronze, and the architectural portion of grey Scotch granite. The bronze casting has been carried out by Mr. A. B. Burton, of Thames Ditton, Surrey, and the granite work by Messrs. Kirkpatrick Bros., of Trafford Park, Manchester.

BUSHEY PARK GATE (SOUTH).—The Office of Works are about to effect an improvement of the entrance into Bushey Park, opposite the gardens of Hampton Court Palace, by widening the gate by 20 ft., replacing the brick wall with railings, and removing the toy and confectionery stall from its present position.

RE-NAMING OF LONDON STREETS.—We observe that Duke-street and Charlotte-street, Marylebone, running parallel with Portland-place on its east side, have recently been incorporated and re-named Hallam-street. Albert-street, Shadwell, will henceforth be known as Solander-street, in memory of Dr. Solander, the eminent Swedish botanist, who lived in the vicinity.



The "Deserted Village" near Streatham.

INSTRUCTION IN MINING, INDIA.—The Secretary of State for India has approved of a recommendation made by the Bengal Government for the making of provision for instruction in mining at the Sibpur Engineering College, Calcutta, and the appointment from England of a professor of mining, at a maximum salary of Rs.1,000 per mensem, and of a peripatetic instructor, with a native assistant. The five years' course will include training in the mining districts, where the students will work under the direction of the local mine managers.

ABBEY CHURCH, NUNEATON.—The restoration committee have accepted a tender of 3,395*l.*, by Messrs. Willcock & Co., of Wolverhampton, for the rebuilding, after Mr. Harold Brakspear's designs, of the chancel of St. Mary's Abbey Church. Within the precincts stand the ruins of the Priory of St. Mary the Virgin, founded *temp.* Stephen, by Robert Earl of Leicester, for some Benedictine nuns from Fontevrault, of which at the Dissolution the revenues were computed at 290*l.* 15*s.* 0½*d.* The church was built about thirty years ago by Mr. Clapton Rolfe, who adopted the style of the former fabric, with Transitional nave and transepts, and Early English choir.

HOLY TRINITY, BLYTHBURGH.—A committee is formed to raise a sum of 3,000*l.* for a reparation of the well-known XVth century parish church which was restored by Mr. Arthur E. Street in 1882-4, after plans prepared by G. E. Street. The church contains some curiously carved choir-stalls, together with the oak carving of the clock jack; and among the bench-ends are some curious "poppy-head" carvings of figures symbolising "the seven deadly sins," one of which, however, has been sawn off, probably for reasons of modern decorum. The paintings, sculpture, and brasses, and most of the stained glass, were destroyed in the days of the Commonwealth. The now ruined priory of Black Canons was bestowed *temp.* Henry I. upon St. Osyth Abbey, in Essex. The committee includes Mr. Crofts, Mr. Seymour Lucas, Sir Ernest Waterlow, Sir C. Purdon Clarke, Sir Ralph Blois, and the Bishop of Norwich.

LONDON COUNTY COUNCIL SCHOOL OF ARTS AND CRAFTS.—The London County Council's Central School of Arts and Crafts will reopen on Monday, September 18, thus entering on the tenth year of its career. During the past session 769 individual students were enrolled, mainly apprentices or journeymen in artistic trades, this number being an advance upon previous records. The school provides at nominal fees practical instruction by specialist teachers in a wide range of handicrafts, grouped generally into (*a*) architecture, furniture, decoration, (*b*) silversmithing and kindred trades, (*c*) bookbinding and other crafts of book production. Pending the completion of the permanent building in Southampton-row, additional temporary premises are being equipped to meet the increasing demand. New classes are being formed in building construction, printing, book illustration, costume designing and dressmaking, painting in tempera, etc. Prospectus and full particulars can be had on application to the Curator at the School, 316, Regent-street, W.

A NEW GULLY.—It is not often that a new gully with important and distinctive features is designed, but Wood's patent gully is an invention of this kind. The trapped gully has a conical inlet, about 9 in. in diameter at the top and tapering to 3 in. below the level of the standing water; the outlet has a diameter of 4 in. The grating is dome-shaped, and a vertical nozzle or spout is fitted through an opening in the crown, the lower end of the nozzle being about 3 in. above the standing water. The wastepipe is connected to the top of the nozzle by a movable shoe. By these means the full force of the discharge is utilised for cleansing the gully and flushing the drain, while at the same time external splashing is avoided. It is a simple and sensible invention.

MONUMENT, NEWBOLD-ON-AVON.—In restoring the church of Newbold-on-Avon, near Rugby, what appears from the description to be a fine early Renaissance monument has been discovered hidden behind a family pew. It consists of a fluted marble slab on an altar tomb, with "incised figures" representing a knight and his lady. From the inscription it is the tomb of Thomas Boughton and his wife Elizabeth, one of whom (but as to which the inscription seems ambiguous) died in May 1454. If the description "incised figures" is correct, this is rather interesting, for it is certainly not a usual way of representing monumental figures otherwise than in brasses.

CULROSS ABBEY RELICS.—According to the *Standard*, some further interesting discoveries have been made in the course of the operations at Culross Abbey during the past few days. A beautifully sculptured stone has been found, upon which is carved a Maltese cross and an ancient form of sword. While there is nothing beyond the sculpture on the stone to indicate the origin of the relic, it is believed to be part of an ancient chieftain's headstone. Near the same place was also found a small baptismal font. Recent operations have revealed part of the original foundations of the building. At any rate, there are unmistakable evidences that the hewn stones were the work of the Culdees. Most of the old stones, which are being taken out, are being refaced and put back in their original positions. Another interesting discovery is a stone coffin—one of the largest found in Scotland—a unique feature of which is the addition of a leather shroud. This is being carefully preserved, awaiting a thorough investigation by representatives of the Crown.

THE USE OF GAS IN WORKSHOPS.—The following remarks are extracted from the last Report of the Medical Officer of Health for the City of London (Dr. W. Collingridge) —"The dangers attendant on the use of gas in workshops for heating purposes, whether in stoves, heaters for irons or tools, or in gas irons, when no means of carrying off the fumes is provided, are very little realised by occupiers of workshops and workplaces, especially in those cases where no *smell* of "gas" is detected. In this relation it may be of interest to quote the remarks made by H.M. Chief Inspector of Factories with regard to the inodorous gas, carbonic oxide (carbon monoxide CO), in a report on water and other gases published in September last. In this Report attention is drawn to the danger of poisoning from the carbon monoxide given off by water and other gases of a similar nature, and in a smaller degree by coal gas. It was pointed out that carbonic oxide poisoning may occur in many ways. Thus danger of this kind may arise from the use of gas irons and from defective gas fittings, and from gas stoves, especially where no provision is made for the products of combustion to be carried away by a flue or chimney. The absence of a chimney

in a room greatly increases the risk. Carbonic oxide is also found where coke fires are used in confined spaces. Symptoms of carbonic oxide poisoning begin with throbbing of the blood vessels of the head, giddiness, palpitation of the heart, and weakness of the limbs. These become greatly aggravated after any exertion. Headache, anæmia, and defective nutrition may result from the long-continued breathing of the gas in small amount, such as might occur from defective gas fittings."

SCHOOL OF ART WOOD-CARVING.—The School of Art Wood-Carving, South Kensington, which now occupies rooms on the top floor of the new building of the Royal School of Art Needlework in Exhibition-road, has been re-opened after the usual summer vacation, and we are requested to state that some of the free studentships maintained by means of funds granted to the school by the London County Council are vacant. The day classes of the School are held from 10 to 1 and 2 to 5 on five days of the week, and from 10 to 1 on Saturdays. The evening class meets on three evenings a week and on Saturday afternoons. Forms of application for the free studentships and any further particulars relating to the school may be obtained from the manager.

CAPITAL AND LABOUR.

NOTTINGHAM BUILDING TRADE DISPUTE.—As the result of a meeting, held on the 8th inst., at the Master Builders' Association's offices between representatives of that body and of the two bricklayers' societies, the question of apprenticeship to the trade is settled. This matter was really the only remaining obstacle to the complete settlement of the dispute in the Nottingham building trade. The rule concerned (No. 8) was discussed at the meeting, and the decision was to retain it as it stands. The effect of the rule is as follows:—Every employer is entitled to two apprentices after being in business a year, but he must not bind a second apprentice until the first has served two years. Any master having employed, on an average, ten bricklayers for twelve months from the binding of the second apprentice is entitled to three apprentices, and so on, one apprentice to every five bricklayers, up to twenty-five bricklayers, the maximum of apprentices being six. If for any unforeseen reason a boy is unable to complete his indentures, he is allowed to continue in the trade as an improver.

SUNDERLAND PLASTERERS' DISPUTE.—On the 11th inst. a conference took place between the builders and plasterers at the Sunderland Town Hall. The proceedings, which lasted two and a half hours, were private. There was an agreement on all points of the rules excepting on the question of lathing, which the masters declared was a special class of work. The conference was brought to a close without considering the wage question, and was adjourned *sine die*.

Legal.

ANCIENT LIGHT DISPUTE SETTLED.

THE case of Hargrave *v.* Coney was in the list for hearing before Mr. Justice A. T. Lawrence in the Vacation Court on Wednesday, on a motion by the plaintiff for an *interim* injunction to restrain, until trial or further order, certain building operations by the defendant.

Counsel for the plaintiff stated that the action was for the alleged infringement of ancient lights, but he was glad to say that the defendant had agreed to construct his buildings in accordance with certain letters that had passed between the parties and in accordance with certain plans that had been mentioned. It was proposed to stay all further proceedings on the terms that had been agreed to between the parties.

The counsel for the defendant assenting to the proceedings being stayed on the terms mentioned, his lordship directed that the action should be stayed accordingly.

THE WIDENING OF PICCADILLY CASE IN THE VACATION COURT.

THE case of Notaras *v.* the Mayor of Westminster came before Mr. Justice A. T. Lawrence, sitting as Vacation Judge, on Wednesday.

Counsel for the plaintiff stated that his client was applying by motion for an *interim* injunction to restrain the defendants, the Mayor and Corporation of the City of Westminster, from proceeding, until the trial of the action or further order, under a notice to treat with respect to the acquisition of a shop for the widening of Piccadilly. He (counsel) had arranged with his learned friend who represented the defendants that the motion should stand over until September 27, the defendants undertaking meantime that no step should be taken under the notice to treat and that there should be no cross-undertaking by the plaintiff.

The counsel for the defendants assented, and the motion accordingly was directed to stand over on these terms.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

17,602 of 1904.—G. S. MAYHEW: *Process for Preparing and Cutting Veneers.*

This relates to a process of manufacturing veneers faced with paper cut in a continuous sheet, from a rotating boiled or steamed green log, in which the face of the log, as it lifts, is first dried and then lined with a continuous sheet of tough paper or the like facing, and then dried again over its faced surface, and finally the dried, faced surface shaved off in the form of a thin, continuous strip of veneer.

17,603 of 1904.—G. S. MAYHEW: *Fireproof Wooden-cored Plaster Slabs for Building, and other purposes.*

This relates to a wooden-cored plaster slab for partitions and ceilings in buildings, and the like, comprising a compo-board core perforated in lines and faced on both sides with thick plaster fed on to said core in regular rows corresponding with said lines of perforations.

19,912 of 1904.—J. HAMBLET: *Brick Kilns, and the like.*

This relates to brick kilns and other kilns known as arched down-draught kilns, and consists in the employment of vertical flues communicating with the underground cross-flues and carried up into the upper part of the arch of the kiln so as to convey the heat from said cross-flues and discharge the heat into the top part of the kiln.

20,047 of 1904.—R. A. BERTWISTLE: *Domestic Firegrate and Blower.*

According to the invention, two upright frames are provided, of iron or other suitable material. The shape of these upright frames are three sides of a square in section, and are placed one on each side of the space provided for the fireplace, with their open sides facing each other. At the back of these frames a piece is fixed which leaves the main part at right angles, and thus forms a seat for the bottom grate; said bottom grate being capable of adjustment higher or lower by having a series of lugs cast at different heights on the back of the upright frames, upon which the bottom grate may be hung. The two upright frames are bolted together with stays, and into the grooves formed upon open sides of the upright frames facing each other a framework is slid, of the same material, which consists of two side pieces to fit the grooves, and sliding therein, fastened together top and bottom by suitable stays. The said two side-pieces are perforated with holes. Pieces of metal are employed as fire bars, and are pivoted at either end to fit in said holders. When fixed in position, and the frame bolted together, the bars are free to move on their pivots.

22,900 of 1904.—J. D. PRIOR: *Apparatus for Heating Apartments, and for other like purposes, by the Circulation of Hot Water or Steam.*

Apparatus for heating apartments, and other like purposes, by the circulation of hot water or steam, consisting in the employment of metallic pipes having a flattened figure in cross section, the ends of which are brazed or otherwise connected to end chambers, the flattened pipes having wave forms of such character, or being otherwise shaped in some part of their length, that they will take up or compensate for the increase and decrease in the length of the pipes, due to changes of temperature, without throwing an undue strain on the connexions of the pipes with the end chambers.

22,901 of 1904.—J. D. PRIOR: *Additions to Heat Radiators for Hot Water or Steam.*

This invention consists in providing the radiators with tubular-end standards or pillars, or with eyes or sockets, and combining therewith vertical rods having crossed arms and horizontal rails, the vertical rods being capable of adjustment in the tubular-end standards or eyes, and of being clamped therein by set screws or other clamping devices, and a detachable rail having cranked and forked end-brackets whereby the said separate rail may be used for drying boots and shoes.

251 of 1905.—F. W. ADAMS: *Door Springs and Checks.*

This invention relates to a shallow form of floor spring and check for single-action doors. Through the top cover of a box let into the floor is a pivoted projection, which is joined to the door by means of a shoe in the ordinary way. Upon the base of this pivot is formed an arm, to the outer end of which is jointed the piston-rod of a check cylinder hinged to the front of the box, the line of action being so arranged that the recess created by the check is greatest at the "door closed" or normal position. To close the door the power of a spiral spring, lying parallel with the cylinder, is applied on the further side of the pivot arm, through the medium of a friction roller mounted on the underside of a lever, which lever crosses the pivot arm and is pivoted to the box on the cylinder side of the arm, at which point it makes contact with the spring. The lever centre is so arranged that the force of the roller is applied to the end of the pivot arm when the door is caused to travel towards the pivot centre as the door opens.

326 of 1905.—J. T. WEBB: *Ventilation of Poultry Houses and Similar Buildings.*

This relates to the ventilation of poultry houses, and consists in the combination of an air space at one side thereof, inlet apertures leading to the lower part of said air space, an outlet from said space at or towards the upper part of the building, or outlets at the upper part of said building, and wind guards over the said apertures.

7,322 of 1905.—H. WERNITSCH: *Means for Letting off Air and Water in Heating Apparatus, and the like.*

A device for allowing air to escape and for carrying off water of condensation from steam heaters, and the like, by means of a loose valve influenced by a loose float characterised by the float and the valve being directly and rigidly connected by a rod with one another, and so arranged that the float when rising and falling turns the valve on its seat, the valve body being provided with a conical recess which, when the float lifts, communicates with the apertures of the valve seat.

10,984 of 1905.—J. H. BALL: *Casement Windows.*

A casement window of the kind in which the casement is held and supported in its frame by means of pivots that project vertically from the top and bottom of one vertical side of the casement into upper and lower guide ways extending from one side of the frame towards the other side thereof, said guide ways being formed with recesses at their ends adapted to receive the pivots or parts connected thereto, and hold them in such positions that the casement can be turned about them, the pivots serving not only as an axis about which the casement can turn, but also as the means of supporting same.

23,065 of 1904.—W. EDGE: *Intercepting Tanks for Water-closets, and the like.*

This consists in the combination with water-closets, and the like, of the use of a filtering grid disposed over an outlet leading to a sewer, the said grid being surrounded by a filtering bed consisting of crushed cinders, "breeze," and the like, together with a framework or shoot.

17,736 of 1904.—W. POWELL: *Vulcanising or Preserving Wood.*

This relates to the treatment of wood, and consists in boiling "green" wood in a compound solution comprising a saccharine solution, and a solution of a suitable metal, and subsequently artificially drying the said wood by artificially heating it, whereby the natural sap of the wood is coagulated and retained by it, as well as the wood being preserved.

22,056 of 1904.—J. E. CASTLE: *Manufacture of Cement.*

This relates to the manufacture of cement. According to the invention the chalk and clay or any other substance used in the manufacture of cement is treated in the ordinary way; the substance may be washed in a wash mill or through pug mills. To the mixture thus formed a certain proportion of fine screenings of "Thames ballast" is added.

22,174 of 1904.—G. L. MOUCHEL: *Concrete Piles, Beams, and other Concrete Structures.*

A reinforced concrete structure, consisting in the combination of a tie or link adapted to pass around metal bars embedded in the concrete, said tie or link comprising a length of wire formed into a loop by twisting it upon itself at one side of said loop, the ends of the wire projecting beyond the twist and adapted to lie in or about the heart of the structure.

297 of 1905.—G. CLEMENTS and J. M. HOSTLER: *Apparatus for Treating Dust Withdrawn from Buildings.*

Apparatus for treating dust withdrawn from buildings, consisting in the combination with a tank adapted to contain water and receive dust, a strainer adapted to remove large particles from the dust, and a mixing-chamber on said tank, said mixing-chamber being adapted to receive dust from the strainer, and wherein the dust is sprayed and deposited into the said tank.

3,419 of 1905.—J. DUFFY: *Wood Paving and the Manufacture of Blocks therefor.*

The object of the invention is the locking together of the component portions of the building blocks in an effective manner. According to the invention the separate sections have formed on their base one or more saw cuts which pass upwards to a certain height, preferably inclined in opposite directions. These saw cuts are in corresponding positions in each section. When the requisite number of separate pieces to form a building block have been assembled together, a locking-bar of a length equal to that of the block is forced into each of the saw cuts.

6,298 of 1905.—W. J. HOOKS and B. W. DONKIN: *Pavement Lights and Prisms therefor.*

A pavement light consisting of a number of prisms of varying length, the said prisms or some of them being partially coated with a reflecting coating so that light may be transmitted in the required direction.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

8,365 of 1905.—A. KRUGER: *Cramps for Joiners, and the like.*

A cramp comprising two limbs, a link connecting same, a handled screw-spindle turning in said link, an internally threaded collar riding on said spindle and linked to the two limbs, and a second handled-spindle contained within the first said spindle and having a threaded portion screwing into the upper end of the first said spindle or its handle respectively.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

September 2.—By W. DEW & SON (at Carnarvon).

Beddgelert, Carnarvon.—Enclosures of land, 103 a. 2 r. 1 p., f.	£600

September 4.—By IZARD & IZARD.

St. John's Wood.—24, Carlton-hill, u.t. 67 yrs., g.r. 12*l.* 12s., e.r. 120*l.*	780
Paddington.—12, Adpar-st. and 40, Hall-pl. (factory), u.t. 57 yrs., g.r. 23*l.* 15s., e.r. 120*l.*, with goodwill	460

September 5.—By GILBERT & HOW.

Paddington.—34, Spring-st., u.t. 16 yrs., g.r. 8*l.*, y.r. 50*l.*	370
Stroud Green.—11, Lancaster-rd., u.t. 70 yrs., g.r. 8*l.* 10s., e.r. 48*l.*	425

By SPELMANS' (at Yarmouth).

Yarmouth.—80, South Town and 1 a. 3 r. 0 p., f., p.	1,725

By THORNBORROW & Co. (at Penrith).

Bewick, Cumberland.—Scalehouses Estate, 192 a. 0 r. 16 p., f. and c.	2,520

September 6.—By MADDISON, MILES, & MADDISON (at Yarmouth).

Hemsby, Norfolk.—The Vineries Farm, 74 a. 0 r. 10 p., f.	2,700
Freehold garden ground, 0 a. 1 r. 10 p.	110
Potter Heigham, Norfolk.—"The Horse Marsh," 12 a. 3 r. 29 p., f.	145
Repps, Norfolk.—A freehold double cottage, y.r. 9*l.*	150

By N. EASTON & SON (at Hull).

Ulceby, Lincs.—Ashdale House Estate, 367 a. 1 r. 10 p., f.	7,850

September 7.—By J. G. DEAN & Co.

Balham.—5 and 27, Nicosia-rd., u.t. 74 yrs., g.r. 18*l.*, y.r. 98*l.*	1,005

By WM. STEVENS.

Southgate.—76 to 79, Travers-rd., u.t. 69 yrs., g.r. 18*l.*, w.r. 72*l.* 16s.	300

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; L.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; h.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PUBLISHER'S NOTICES.

Tel. No., 6112, Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME LXXXVIII. (January to June, 1905) was given as a supplement with the number of July 8th.

CLOTH CASES for Binding the Numbers are now ready, price 1s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE EIGHTY-EIGHTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence, now ready.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 1s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under	6s. 0d.
Each additional line	1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under	4s. 6d.
Each additional line (about ten words)	0s. 6d.

Terms for series of Trade advertisements, and for front page, and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under	2s. 6d.
Each additional line (about ten words)	0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

. Stamps must not be sent, but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," Catherine Street, W.C.

Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

PERSONS advertising in "THE BUILDER" may have *Replies addressed to the Office*, Catherine Street, Covent Garden, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed) 1s.

MEETINGS.

SATURDAY, SEPTEMBER 16.

Newcastle Architectural Association.—Visit to the New Royal Infirmary, Newcastle-on-Tyne.

WEDNESDAY, SEPTEMBER 20.

Provident Institution of Builders' Foremen and Clerks of Work.—Ordinary Meeting at 8 p.m.

Institute of Sanitary Engineers, Ltd.—Opening Sessional Meeting at the Council Chamber, Holborn Restaurant. The Chair will be taken by the President (Mr. J. A. Crowther, A.M.Inst.C.E.) at 7 p.m.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum. Remittances (payable to J. MORGAN) should be addressed to the Publisher of "THE BUILDER," Catherine-street, W.C.

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PRICES CURRENT OF MATERIALS.

. Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.			
Hard Stocks	1	8	0	per 1000	alongside, in river.	
Rough Stocks and Grizzles	1	4	0	,,	,,	,,
Facing Stocks	2	0	0	,,	,,	,,
Shippers	2	0	0	,,	,,	,,
Flettons	1	7	0	,,	at railway depôt.	
Red Wire Cuts	1	14	0	,,	,,	,,
Best Fareham Red	3	12	0	,,	,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,,	,,	,,
Best Blue Pressed Staffordshire	4	2	6	,,	,,	,,
Do. Bullnose	4	7	6	,,	,,	,,
Best Stourbridge Fire Bricks	4	0	0	,,	,,	,,
GLAZED BRICKS.						
Best White and Ivory Glazed Stretchers	12	0	0	,,	,,	,,
Headers	11	0	0	,,	,,	,,
Quoins, Bullnose, and Flats	16	0	0	,,	,,	,,
Double Stretchers	19	0	0	,,	,,	,,
Double Headers	16	0	0	,,	,,	,,
One Side and two Ends	19	0	0	,,	,,	,,
Two Sides and one End	20	0	0	,,	,,	,,
Splays, Chamferred, Squints	20	0	0	,,	,,	,,
Best Dipped Salt Glazed Stretchers, and Header	12	0	0	,,	,,	,,
Quoins, Bullnose, and Flats	14	0	0	,,	,,	,,
Double Stretchers	15	0	0	,,	,,	,,
Double Headers	14	0	0	,,	,,	,,
One Side and two Ends	15	0	0	,,	,,	,,
Two Sides and one End	15	0	0	,,	,,	,,
Splays, Chamferred, Squints	14	0	0	,,	,,	,,
Second Quality White and Dipped Salt Glazed	2	0	0	,,	less than best.	

	s.	d.		
Thames and Pit Sand	7	0	per yard,	delivered.
Thames Ballast	5	9	,,	,,
Best Portland Cement	27	0	per ton,	,,
Best Ground Blue Lias Lime	20	0	,,	,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime.....12s. 0d. per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.		
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft.	cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	,,	,,
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf	2	1	,,	,,
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf	2	2½	,,	,,

	s.	d.		
Ancaster in blocks	1	11	per ft. cube,	deld. rly. depôt.
Beer ,,	1	6	,,	,,
Greenshill ,,	1	10	,,	,,
Darley Dale in blocks	2	4	,,	,,
Red Corsehill ,,	2	2	,,	,,
Closeburn Red Freestone	2	0	,,	,,
Red Mansfield ,,	2	4	,,	,,

YORK STONE—*Robin Hood Quality.*

Scappled random blocks	2	10	,,		,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super.		,,
6 in. rubbed two sides ditto, ditto	2	6	,,		,,
3 in. sawn two sides slabs (random sizes)	0	11½	,,		,,
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	,,		,,
1½ in. to 2 in. ditto, ditto	0	6	,,		,,

STONE (*continued*).

	s.	d.		
HARD YORK— Scappled random blocks	3	0	per ft. cube,	deld. rly. depôt.
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	3	8	per ft. super.	,,
6 in. rubbed two sides ditto	3	0	,,	,,
3 in. sawn two sides (slabs random sizes)	1	3	,,	,,
2 in. self-faced random flags	0	5	,,	,,

	s.	d.		
Hopton Wood (Hard Bed) in blocks	2	0	per ft. cut s.	deld. rly. depôt.
,, ,, ,, 6 in. sawn both sides landings	2	7	per ft. super.	deld. rly. depôt.
,, ,, ,, 3 in. sawn both sides random slabs	1	0	,,	,,
,, ,, ,, 2 in. do.	0	8½	,,	,,

SLATES.

in.	in.	£	s.	d.		
20	10 best blue Bangor	13	2	6	per 1000 of 1200 at	r. d.
20	12 ,, ,,	13	17	6	,,	,,
20	10 first quality ,,	13	0	0	,,	,,
20	12 ,, ,, ,,	13	15	0	,,	,,
16	8 ,, ,, ,,	7	5	0	,,	,,
20	10 best blue Portmadoc	12	12	6	,,	,,
16	8 ,, ,,	6	12	6	,,	,,
20	10 best Eureka unfading green	15	17	6	,,	,,
20	12 ,, ,,	18	7	6	,,	,,
18	10 ,, ,,	13	5	0	,,	,,
16	8 ,, ,,	10	5	0	,,	,,
20	10 permanent green	11	12	6	,,	,,
20	12 ,, ,,	9	12	6	,,	,,
18	10 ,, ,,	8	12	6	,,	,,
16	8 ,, ,,	6	12	6	,,	,,

TILES.

	s.	d.		
Best plain red roofing tiles	42	0	per 1000 at	rly. depôt.
Hip and Valley tiles	3	7	per doz.	,, ,,
Best Broseley tiles	50	0	per 1000	,, ,,
Do. Ornamental tiles	52	6	,,	,, ,,
Hip and Valley tiles	4	0	per doz.	,, ,,
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000	,, ,,
Do. Ornamental do	60	0	,,	,, ,,
Hip tiles	4	0	per doz.	,, ,,
Valley tiles	3	0	,,	,, ,,
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000	,, ,,
Do. Ornamental do	54	6	,,	,, ,,
Hip tiles	4	1	per doz.	,, ,,
Valley tiles	3	8	,,	,, ,,
Best "Rosemary" brand plain tiles	48	0	per 1000	,, ,,
Best Ornamental tiles	50	0	,,	,, ,,
Hip tiles	4	0	per doz.	,, ,,
Valley tiles	3	8	,,	,, ,,
Best "Hartshill" brand plain tiles, sand faced	50	0	per 1000	
Do. pressed	47	6	,,	,, ,,
Do. Ornamental do	50	0	,,	,, ,,
Hip tiles	4	0	per doz.	,, ,,
Valley tiles	3	6	,,	,, ,,

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13	10	0	15	0	0
Deals: best 3 by 9	13	0	0	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	,,	,,	,,
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	10	0	0
2 in. by 4½ in. and 3 in. by 5 in.	8	10	0	9	10	0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	,,		

	At per load of 50 ft.					
Fir timber: best middling Dantzig or Memel (average specification)	4	10	0	5	0	0
Seconds	4	0	0	4	10	0
Small timber (8 in. to 10 in.)	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	10	0	3	0	0
Pitch-pine timber (30 ft. average)	3	5	0	3	15	0

JOINERS' WOOD.	At per standard.					
White Sea: first yellow deals, 3 in. by 11 in	24	0	0	25	0	0
3 in. by 9 in.	22	0	0	23	0	0
Battens, 2½ in. and 3 in. by 7 in.	16	10	0	18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0	20	0	0
,, ,, 3 in. by 9 in.	17	10	0	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	0	0	22	10	0
Do. 3 in. by 9 in.	18	0	0	19	10	0
Battens	13	10	0	15	0	0
Second yellow deals, 3 in. by 11 in.	16	0	0	17	0	0
Do. 3 in. by 9 in.	14	10	0	16	0	0
Battens	11	0	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	14	0	0
Do. 3 in. by 9 in.	12	10	0	14	0	0
Battens	10	0	0	11	0	0
White Sea and Petersburg:— First white deals, 3 in. by 11 in.	14	10	0	15	10	0
,, ,, 3 in. by 9 in.	13	10	0	14	10	0
Battens	11	0	0	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0
,, ,, 3 in. by 9 in.	12	10	0	13	10	0
,, ,, battens	10	0	0	11	0	0

PRICES CURRENT.—*Continued on page 309.*

COMPETITION, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITION.

Nature of Work.	By whom Required.	Premiums.	Designs to be Delivered
Baptist Chapel, Maesteg	The Committee	Not stated	Nov. 4

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be Delivered
Extension of Sewer	Southwick U.D.C.	Council's Surveyor, Council Offices, Southwick	Sept. 18
Construction of Clyde Bank Branch	Caledonian Railway Co.	Formans & McCall, Engineers, 160, Hope-street, Glasgow	do.
Repairs and Improvements at School	Monmouthshire Education Com.	D. Morgan, Architect, Clarence-street chambers, Cardiff	do.
Bacteria Beds at Sewage Works, Haslemere	Hambledon R.D.C.	J. H. Howard, Surveyor, Lower-street, Haslemere	do.
Paint Work and Small Repairs at Town Mills	Guildford Town Council	Borough Surveyor, Guildford	do.
Ceiling, Boarding Painting, etc., Roofs of Baths	Manchester Corporation	City Architect, Town Hall, Manchester	do.
Wall and Floor Tiling and Terrazzo Paving at Baths	do.	do.	do.
150,000 Hardwood Sleepers	Central South African Railways	Crown Agents for Colonies, Whitehall-gardens, S.W.	do.
Painting of Schools and Caretakers' Houses	Bradford Education Committee	Secretary, Education Office, Manor-row, Bradford	do.
Furniture and Fittings for Generating Station	Handsworth U.D.C.	Henman & Cooper, Architects, 19, Temple-street, Birmingham	Sept. 19
Collection of Dust	Edmonton U.D.C.	Inspector of Nuisances, Town Hall, Edmonton	do.
Stoneware Pipes	do.	Council's Engineer, Town Hall, Edmonton	do.
Portland Cement	do.	do.	do.
Construction of Water Supply Works	Colwyn Bay U.D.C.	Council's Engineer, Council Offices, Colwyn Bay	do.
Two New Annexes, with Baths, etc., at Infirmary	Belfast Union	Clerk's Office, Union Workhouse, Belfast	do.
Sewerage Works	Reigate R.D.C.	R. B. Grantham & Son, 23, Northumberland-avenue, W.C.	do.
Iron and Glass Verandahs at Union Workhouse	Leeds Guardians	T. Winn & Sons, Architects, 84, Albion-street, Leeds	do.
*NEW ROAD WORKS, HERTFORD	Messrs. Usher & Barclay	Norris & Duvall, Surveyors, 60, Fore-street, Hertford	Sept. 20
Centrifugal Pumps	Kettering U.D.C.	Council's Engineer, Market-place, Kettering	do.
Stoneware Pipe Sewer	Hendon R.D.C.	Council's Surveyor, Gt. Stanmore	do.
Re-erecting Jacketted Boiling Pans & Building Work	Devonport Guardians	H. G. Luff, Architect, Chapel-street, Devonport	do.
Public Elementary School, Darell-road	Richmond (Surrey) T.C.	Town Clerk, Town Hall, Richmond, Surrey	Sept. 21
Iron Railways	Prestwich Union	W. T. Jones, Union Offices, Cheetham Hill-road, Manchester	do.
Flagging Yards at Cottage Homes, near Warrington	Salford Union	H. Lord, Architect, 42, Deansgate, Manchester	Sept. 22
Dressed Granite Kerb and Channel	Brighton Town Council	Borough Engineer, Town Hall, Brighton	do.
Equipment of Washhouse at Workhouse	Chorlton & Man. Jt. Wk.house Com.	A. J. Murgatroyd, Architect, 23, Strutt-street, Manchester	do.
Erection of Stone-Breaking Sheds at Workhouse	do.	do.	do.
*MAKING-UP AND PAVING LAUDERDALE-RD.	Paddington Borough Council	Borough Surveyor, Town Hall, Paddington, W.	Sept. 23
Supply of Shingle	do.	do.	do.
Unclimbable Wrought-Iron Fencing	Leigh Corporation	Borough Engineer, Bank-chambers, Leigh, Lancs.	do.
New Works, Ingress Abbey Park, Greenhithe	Wall Paper Manufacturers, Ltd.	Company's Offices, 11, Southampton-row, W.C.	do.
Underpinning and Repair of Infirmary Buildings	Pembrokeshire Infirmary	T. H. Jones, Secretary, High street, Haverfordwest	do.
Iron Pipes and Specials	Epsom U.D.C.	W. Young Waterworks, East-street, Epsom	Sept. 25
Causewaying of Carriageway of Scott-street	Perth Town Council	Borough Surveyor, 12, Tay-street, Perth	do.
New Building for Children, Hunstanton	do.	A. P. MacAlister, Architect, 20, St. Andrew's-street, Cambridge	do.
Granite	Braintree U.D.C.	Council's Surveyor, Vestry Hall, Braintree	do.
Use of Steam Roller and Scarifier	do.	do.	do.
Sinking and Boring a Well	Upton-on-Severn R.D.C.	Willcox & Raikes, 63, Temple-row, Birmingham	Sept. 26
Square Brick Water Tower	Uxbridge U.D.C.	F. S. Courtney, Engineer, 25, Victoria-street, S.W.	do.
Water Tanks and Mains	do.	do.	do.
*NEW LABORA., BUARTH MR., ABERYSTWYTH	University College of Wales	Registrar, at College, Aberystwyth	do.
*COOKERY CENTRE AT DOWNSHALL SCHOOLS	Ilford U.D.C.	C. J. Dawson, Architect, 11, Cranbrook-road, Ilford	do.
*ERECT. OF SCHOOLS ON WATER-LANE SITE	do.	do.	do.
*ADDITIONS TO TOWN HALL	Wood Green U.D.C.	Council's Engineer, Town Hall, Wood Green, S.W.	Sept. 27
Making-up of Ridler-road	Enfield U.D.C.	Council's Surveyor, Public Offices, Enfield	do.
Earthwork and Construction of Bridge, Darwen	Lanc. & Yorks. Railway Co.	Engineer's Office, Hunt's Bank, Manchester	do.
*ERECT. OF LAVATORIES, WRKHSE. EDGWARE	Hendon Union	Union Offices, Edgware	do.
Blue Guernsey Granite Chippings and Dust	Romford U.D.C.	Council's Surveyor, Council Offices, Romford	Sept. 28
Steam Rolling and Scarifying	do.	do.	do.
*WOOD PAVING WORKS	Hampstead Borough Council	Council's Engineer, Town Hall, Hampstead, N.W.	do.
New Pavilions, Nurses' Homes, etc., at City Hospital	Newcastle-on-Tyne Sanitary Com.	City Property Surveyor's Dept., Town Hall, Newcastle-on-Tyne	Sept. 29
Broken Granite	Hitchin U.D.C.	Council Offices, Town Hall, Hitchin	do.
Public Elementary School	Warrington Education Committee	Education Office, Sankey-street, Warrington	do.
Overhead Equipment and Cables for Tramways	Pontypridd U.D.C.	R. P. Wilson, Engineer, 66, Victoria-street, S.W.	Sept. 30
*MAKING-UP ROADS	Swanage U.D.C.	Council's Surveyor, Town Hall, Swanage	do.
Roadmaking and Paving Works	Lewisham Borough Council	Council's Surveyor, Town Hall, Catford	Oct. 2
Telephones & Elec. Bells, Langho Epileptic Colony	Chorlton & Manches Jt. Asy. Com.	Clerk, Chorlton Union Offices, All Saints', Manchester	Oct. 3
Furniture for Manor Park School Enlargement	East Ham Education Committee	Secretary, Education Office, East Ham, E.	do.
*CONSTRUC. LIGHT RAILWAY, WOOD GREEN	Middlesex C.C.	County Engineer, Middlesex Guildhall, Westminster, S.W.	Oct. 4
*NEW ELEMENTARY SCHOOLS, TAUNTON	Taunton Education Committee	Bryan & Roberts, Architects, 2, Hammet-street, Taunton	do.
Sewerage Works, Caxtonbridge District	Watford U.D.C.	Council's Surveyor, Watford	do.
Sewerage of Rickmansworth-road and Hagden-lane	do.	do.	do.
Earthenware or Stoneware Sewer Pipes	do.	do.	do.
Broken Granite	do.	do.	do.
*SUPERSTRUC., NEW BLOCK, HOMERTON INF.	Hackney Guardians	Clerk's Office, Hackney Union, Homerton, N.E.	do.
*ENLARGEMT. OF POST-OFFICE, HARROGATE	Commissioners of H.M. Works, etc.	H.M. Office of Works, Storey's Gate, S.W.	do.
*NEW FIRE STATION	Eastbourne Corporation	Borough Surveyor, Town Hall, Eastbourne	Oct. 7
*SUPERSTRUC. NEW PWR. STA., BLACKFRS., S.E.	Commissioners of H.M. Works, etc.	H.M. Office of Works, Storey's-gate, S.W.	Oct. 10
Galvanised Iron Fencing and Gates	Southall-Norwood U.D.C.	Council's Engineer, Public Offices, Southall	do.
*ERECTION OF BATHS	Wandsworth Borough Council	Council House, East Hill, Wandsworth, S.W.	Oct. 16
*NEW SCHOOL, ETC., BRAINTREE	Essex Education Committee	Chancellor & Son, Architects, Duke-street, Chelmsford	No date.
Re-building Farm Buildings, Alton, Hants	J. G. Wood, Esq.	Hunt & Chalcraft, Architects, 48, Bishopsgate Within, E.C.	do.
Erection of St. Patrick's Schools, Leeds	do.	E. Simpson, Architect, Manningham, Bradford	do.
Alterations and Additions to Harrogate Infirmary	do.	H. E. & A. Bown, Architects, James-street, Harrogate	do.
*ADDITIONAL WING, BEXLEY HEATH HOME	Foresters' Homes Committee	J. S. Paul & Son, 31, Bedford-row, W.C.	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
Clerk of Works	Llantris. & Llantwit Fardre R.D.C.	60s. per week	Sept. 21
General Foreman	Altrincham U.D.C.	40s. per week	Sept. 22
Assistant Surveyor	Tipperary C.C.	140*l.*	Sept. 25
Inspector of Nuisances	Sheerness U.D.C.	100*l.*	do.
Clerk of Works for new Fire Station	Blackburn Corporation	4*l.* per week	do.
*INSTRUC. MANUAL TRAINING, METAL WORK	L.C.C.	100*l.*	do.
*ASSIS. INS. MANUAL TRAINING, METAL WORK	do.	80*l.*	do.
*ARCHITECTURAL ASSISTANT	Hull Education Committee	100*l.*	Oct. 4

Those marked with an asterisk (*) are advertised in this number. *Competitions*, —. *Contracts*, iv. vi. viii. x. *Public Appointments*, xvi. xvii.

PRICES CURRENT—*Continued from page 307.*

WOOD (*continued*).

	At per standard. £ s. d.	£ s. d.
Pitch-pine: deals	16 10 0	20 0 0
Under 3 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	„
Seconds, regular sizes	28 0 0	„
Yellow Pine oddments	28 0 0	„
Keri Pine—Planks, per ft. cube	0 3 6	0 5 0
Dantzig and Stettin Oak Logs—		
Large, per ft. cube	0 3 0	0 3 6
Small „ „	0 2 8	0 2 9
Waincot Oak Logs, per ft. cube	0 5 0	0 5 6
Dry Waincot Oak, per ft. sup. as inch	0 0 8	0 0 9
½ in. do. do.	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 1 0
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	17 0 0	22 0 0
American Whitewood Planks, per ft. cube	0 4 0	0 5 0

Prepared Flooring, etc.—

	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 13 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow, matched and headed or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. do. do.	0 14 0	0 18 0
¾ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 12 9	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 0 0 ...	6 15 0
Compound Girders, ordinary sections	7 10 0 ...	8 10 0
Steel Compound Stanchions	9 2 6 ...	10 12 6
Angles, Tees and Channels, ordinary sections	7 10 0 ...	8 10 0
Fitch Plates	7 15 0 ...	8 5 0
Cast Iron Columns and Stanchions including ordinary patterns	6 12 6 ...	7 15 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
Iron—		
Common Bars	7 0 0 ...	7 10 0
Staffordshire Crown Bars, good merchant quality	7 10 0 ...	8 0 0
Staffordshire "Marked Bars"	9 10 0 ...	—
Mild Steel Bars	8 5 0 ...	8 15 0
Hoop Iron, basis price	8 15 0 ...	9 0 0
„ „ Galvanized	16 10 0 ...	—
("And upwards, according to size and gauge.)		
Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 0 0 ...	—
„ „ 24 g.	10 0 0 ...	—
„ „ 26 g.	11 15 0 ...	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.	12 10 0 ...	—
Ordinary sizes to 22 g. and 24 g.	13 0 0 ...	—
„ 26 g.	14 0 0 ...	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	15 10 0 ...	—
„ „ 22 g. and 24 g.	16 0 0 ...	—
„ „ 26 g.	17 10 0 ...	—
Galvanised Corrugated Sheets—		
Ordinary sizes 6 ft. to 8 ft. 20 g.	12 10 0 ...	—
„ „ 22 g. and 24 g.	13 0 0 ...	—
„ „ 26 g.	13 15 0 ...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 0 0 ...	—
Best Soft Steel Sheets, 22 g. & 24 g.	12 0 0 ...	—
„ „ „ 26 g.	13 10 0 ...	—
Cut Nails, 3 in. to 6 in.	9 0 0 ...	9 10 0
(Under 3 in., usual trade extras.)		

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
Lead—Sheet, English, 3lb. and up	16 15 0 ...	—
Pipe in coils	17 5 0 ...	—
Soil pipe	19 15 0 ...	—
Compo pipe	19 15 0 ...	—
Zinc—Sheet—		
Vieille Montagne ton	30 5 0 ...	—
Silesian	30 0 0 ...	—
Copper—		
Strong Sheet per lb.	0 0 11 ...	—
Thin „ „	0 1 0 ...	—
Copper nails „	0 0 11 ...	—
Brass—		
Strong Sheet „	0 0 10 ...	—
Thin „	0 0 11 ...	—
Tin—English Ingots „	0 1 5½ ...	—
Solder—Plumbers' „	0 0 7 ...	—
Tinmen's „	0 0 6½ ...	—
Bowpipe „	0 0 6½ ...	—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	5½d. per ft. delivered.
„ fourths	3½d. „ „
21 oz. thirds	3¾d. „ „
„ fourths	4¼d. „ „
26 oz. thirds	3d. „ „
„ fourths	4¾d. „ „
32 oz. thirds	3¾d. „ „
„ fourths	5¼d. „ „
Patent Sheet, 15 oz.	5d. „ „
„ 21 oz.	5¾d. „ „
Harley's Rolled Plate	4½d. „ „
¼ „ „ „	3½d. „ „
½ „ „ „	2½d. „ „

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 1 7
„ „ „ in barrels	„	0 1 7½
„ „ „ in drums	„	0 1 8½
Boiled „ „ in pipes	„	0 1 9
„ „ „ in barrels	„	0 1 8½
„ „ „ in drums	„	0 1 11½
Turpentine, in barrels	„	0 3 10
„ in drums	„	0 4 0
Genuine Ground English White Lead	per ton	19 15 0
Red Lead, Dry	„	19 5 0
Best Linseed Oil Putty	per cwt.	0 6 8
Stockholm Tar	per barrel	1 19 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 16 6

TO CORRESPONDENTS.

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

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All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABERDARE.—For building twenty houses on the site of Aberpwawr Brewery, for Mr. and Mrs. Taliesin James. Mr. Aswwin T. James, engineer, architect and surveyor. Quantities by persons tendering from plans and specifications:—

Miles Bros., John-street, Cardiff*‡	£3,380 0	J. D. Wilkin‡	£3,670 0
		A. Richards§	187 10
		W. E. Willis‖	3,750 0

‡ Making allowance for materials on site.
§ Per house without allowing for materials on site.
‖ Allowing for materials on site, and for building bath room, etc., inclusive.

ANDOVER.—For supplying and fixing kerbing, channelling, pitching, and Victoria stone paving, for the Corporation. Mr. R. W. Knapp:—

Macadam.

Clee Hill Stone Co.	£173 19 2
Field & Mackay, Salop*	173 19 2

Paving Works.

Beale & Sons	£468 5 0
Annett & Sons	453 6 11
Pice Bros.	452 6 9
Grounds & Newton, Bournemouth*	423 11 4

[Surveyor's estimate £434 18s. 11d.]

BRANKSOME (Dorset).—For making-up the north part of Albert-road, for the Urban District Council. Mr. S. J. Newman, Surveyor, Lake-road, Branksome:—

H. C. Brixey	£736 2 9	Gates & Gullivar	£676 12 7
G. T. Buddan	705 16 11	G. Maidment	671 11 1

BREACHWOOD GREEN (Welwyn, Herts).—For alterations and repairs to cottages and shop premises, Breachwood Green, Welwyn, Herts. Mr. S. Doddimeade Edmunds, architect and surveyor, Victoria-street, St. Albans:—

T. Wood & Sons	£194 12	S. Wilson & Son	£175 0
J. Saunders & Son	185 0		

BRIDGEND.—For erecting hall and classrooms in connexion with the English Presbyterian Church. Mr. P. J. Thomas, architect, Bridgend:—

P. Gaylard	£620 0 0	Price & Morgan, Cemetery-road, Bridgend*	£587 13 2
W. Thomas	593 0 0		

CARSHALTON.—For carrying out footpath works, for the Urban District Council. Mr. W. Willis Gale, A.M.Inst.C.E., Council Offices, High-street, Carshalton:—

W. Swaker	£893 9 10	Harrison & Waterhouse	£761 7 4
H. C. Soan	876 9 10	E. Ilse	752 17 0
Treeby & Co.	861 7 4	Kavanagh	750 12 3
J. A. Ewart	856 3 2	W. Pearce	739 3 10
S. Atkins	853 4 11	Road Maintenance Co., Ltd.	719 8 10
E. Streeter	849 13 2	J. R. Potter.	717 4 0
S. Gibbons	822 11 2	W. Jenner, Sutton*	636 8 6
Free & Co.	810 14 10	Cheshire Asphalte Co.‡	569 0 2
Shelbourne & Co.	788 16 2		
Free & Sons	784 12 8		
T. Adams	775 13 5		

[‡ Informal.]

CORK.—For erecting a house in Blarney-street. Mr. D. J. Buckley, architect, 15, Marlborough-street, Cork:—

D. Duggin	£445	J. Kearns	£360
P. Spillane	385	J. Nagle*	340
J. Slack	380		

EAST DEREHAM.—For the erection of two villas at Wellington-road, East Dereham, for Mr. John Edgeley. Mr. William D. Hubbard, architect and surveyor, 16, Market-place, East Dereham:—

H. Mack	£462 12
G. Took	450 10

GOLDTHORPE.—For private street works, back roads, Goldthorpe, for the Bolton-upon-Dearne Urban District Council. Mr. J. W. Wilson, Hoyland:—

H. Wallis	£645 1 6	H. Elleson	£352 4 3½
J. Hadfield & Sons	478 2 5	E. Groom	313 3 5
C. Green & Sons	474 0 3	J. Moran	302 5 4½
G. W. Meanley	443 7 6	J. Holmes & Son, Brassington-st., Clay Cross*	284 4 6
W. Baines	350 0 0		
G. Hall & Co.	377 15 0		

HAMPTON WICK.—For alterations and additions to "The Elms," for Mr. F. Jacob. Mr. H. A. Whitburn, architect, 22, Surrey-street, W.C., and Woking:—

G. Oldridge & Son	£2,277	R. Wood & Son	£1,846
G. Kemp	1,929	T. Holloway	1,792
Dowley & Co.	1,899	W. H. Gaze & Son*	1,689

HARPENDEN.—For forming new roads on the Cooters End Estate. Messrs. Rumball & Edwards, surveyors, St. Albans:—

Bell	£532	Williams*	£405
Butterworth	475		

HARROGATE.—For private street improvement works, Starbeck, for the Corporation. Mr. F. Bagshaw, Borough Engineer and Surveyor, Harrogate:—

R. Long, Forest-avenue, Starbeck, Harrogate*	£233 5 10

HENDON, N.W.—For the completion of a building on the Collindale Estate, Hendon, N.W., for Mr. Abraham Booth. Mr. S. Doddimeade Edmunds, architect and surveyor, St. Albans:—

W. R. Holden & Co.	£480	G. Jaggard	£414

KEW.—For the erection of a convenience for women near King Edward VII. Bridge, for the Richmond Corporation. Mr. J. H. Brierley, Borough Surveyor, Town Hall, Richmond:—

G. Cheswass	£497	Soole & Son, Sheen-road*	£480
J. W. Brooking	493		
Speechley & Smith	489		

[Borough Surveyor's estimate, £600.]

KILDARE.—For erecting a new pumping station, for the Naas No. 1 Rural District Council. Mr. F. Bergin, B.E., engineer, Beechgrove, Kildare:—

P. Blake, 203, Great Brunswick-street, Dublin	£996 8 9

LLANHILLETH.—For erecting a Wesleyan Church, etc., for the Trustees. Mr. W. Moses, architect, Clifton House, Risca:—

J. Jenkins, Ltd.	£1,500	J. J. Partridge	£1,343
D. Lewis	1,362	N. Bagley	1,326

LONDON.—For demolishing Nos. 135-143, Charing Cross-road, and erecting new business premises, for Messrs. J. Jacobus & Sons. W. A. Finch, architect, 76, Finsbury-pavement, E.C. Quantities by Mr. G. T. G. Wright, 3, Great Winchester-street, E.C.:—

Barrett & Power	£8,496	H. Lovatt, Ltd.	£7,800
Styles & Son	8,328	Shurmur & Sons, Ltd.	7,695
Masey & Son, Ltd.	8,296	Stapleton & Sons	7,692
Whitehead & Co., Ltd.	7,976	J. Grover & Son	7,681
Patman & Fotheringham, Ltd.	7,973	B. E. Nightingale	7,589
Lorden & Son	7,887	Kilby & Gayford*	7,136

[*Accepted with additional work £8,236.]

LONDON.—For making-up a portion of Holden-road, Finchley, for the Urban District Council of Finchley:—

W. Iles, Southend-on-Sea*	£3,585

LONDON.—For alterations and additions to 27 and 29, Whitfield-street, for Messrs. Tubbs & Farey. Mr. H. A. Whitburn, architect, 22, Surrey-street, W.C., and Woking:—

T. Sobey*	£284 0 0

LOUGHBOROUGH.—For constructing waterworks in connexion with the Leicester Corporation main (Blackbrook temporary main), for the Corporation. Mr. A. H. Walker, A.M.Inst.C.E., Waterworks' Engineer, Town Hall, Loughborough. Quantities by Engineer:—

I. Dean & Co.	£2,510 2 0	Jowett Bros.	£1,736 2 6
J. H. Macdonald	2,277 0 0	H. Roberts	1,686 0 0
Construction & Trading Co.	1,875 0 0	A. Jewell	1,486 16 6
Hardy & Atkinson	1,816 3 6	W. Moss & Sons, Ltd., Loughborough*	1,355 0 0

LUDDENDEN FOOT.—For the supply of non-slip granite setts, for the Urban District Council. Mr. J. S. Bottomley, Surveyor, Council Offices, Luddenden Foot, Yorks:—

	Per ton.
A. & F. Manuello, Gracechurch-street, London*	£1 6 5

[Quantity required about 1,350 tons.]

MILL HILL, N.W.—For the erection of two villa residences, Hendon Wood-lane, Mill Hill, N.W., for Mr. C. G. Bowyer and Mr. S. Nadale. Mr. S. Doddimeade Edmunds, architect and surveyor, St. Albans :—

Pearson & Son	£1,475 0	H. Phillips	£1,140 0
J. Christie	1,182 10	W. Goodchild & Son	987 10
W. Tout	1,145 0		

MOUNT HAWKE.—For restoration of Wesleyan Methodist Church, for Wesleyan Church. Mr. Sampson Hill, architect, Green-lane, Redruth. Quantities by architect :—

J. Tredinnick	£867 8 6	T. Willoughby	£642 0 0
T. Rodliffe & George	768 18 0	W. H. Moyle, Chacewater*	631 0 0
J. Odgers	695 0 0	W. S. Tippett	630 0 0
W. C. Hodge	656 0 0		

PRESTON (Lancs.).—For erecting a scullery at Fulwood Workhouse, for the Guardians. Mr. T. Whitwell, engineer :—

M. Shorrock, Fulwood, Preston* £273

RHYMNEY.—For covering two tanks at the Sewage Disposal Works, for the Urban District Council. Mr. W. Lloyd Marks, Surveyor, 61, High-street, Rhymney :—

D. Davies	£295 0	W. Lewis, Cefn Bryn, Britdhir, New Tredegar*	£200 0
D. Jones	269 10		

RYDE.—For iron fencing at the Waterworks, for the Corporation. Mr. C. Mathew, Borough Engineer and Surveyor :—

J. Elwell, Birmingham* £598 2 6

[Including fixing.]

RYDE.—For erecting cottages at Waterworks, for the Corporation. Mr. C. Mathew, Borough Engineer and Surveyor :—

G. Hayles	£1,200 0	Wheeler Bros.	£920 0
H. Linington	1,195 0	J. Whitewood, Ryde*	893 10
M. A. Newman & Co.	1,090 0		

SAWBRIDGEWORTH.—For erecting a fire-station in Church-street, for the Urban District Council. Mr. A. T. Watts, Surveyor to the Council :—

W. H. Hinkins	£424 0	T. W. Burton & Son, Sawbridgeworth*	£389 0
W. Robinson	418 7	E. & N. Lawrence	380 0
R. H. Hockley	415 10	Parren & Son	375 0
W. Winch	415 0		

SEDGEFIELD (Co. Durham).—For sewerage and sewage disposal for Ferryhill Station, Chilton, and Mainsforth, for the Rural District Council. Messrs. D. Balfour & Son, engineers, 3, St. Nicholas-buildings, Newcastle-on-Tyne :—

J. Jameson & Co., Temple-row, Birmingham* £4,634

SOUTHWELL. — For sewerage works (Contract No. 1), for the Rural District Council. Messrs. H. Walker & Son, engineers, Albion-chambers, King-street, Nottingham :—

T. H. Harper, Carlton, Nottingham .. £6,396

SOUTHWELL. — For sewerage works (Contract No. 2), for the Rural District Council. Messrs. H. Walker & Son, engineers, Albion-chambers, King-street, Nottingham :—

Stanton Iron Co., Stanton, Derbyshire .. £551

ST. ALBANS.—For the erection of a detached residence, No. 1, Clarence-road, St. Albans, for Mr. A. J. L. Gliddon. Mr. S. Doddimeade Edmunds, architect, St. Albans :—

Vail & Williamson, St. Albans* £747 9

ST. ALBANS.—For the erection of a detached residence, No. 2, Jennings-road, St. Albans, for Mr. A. J. L. Gliddon. Mr. S. Doddimeade Edmunds, architect, St. Albans :—

C. W. Dumpelton £996
W. Goodchild & Son, St. Albans* 920

[Accepted with modifications.]

ST. ALBANS.—For the erection of pair of villa residences, Blandford-road, St. Albans, for Mr. T. R. Yates. Mr. S. Doddimeade Edmunds, architect, St. Albans :—

Pail & Williamson	£939 0	C. W. Dumfelton	£891 14
W. Sharp	895 0	H. J. Skelton*	780 0

[All of St. Albans.]

STOWMARKET.—For laying 560 yds. of sewer in Ipswich-road, etc., for the Urban District Council. Mr. G. W. Lingwood, Surveyor, Station-road, Stowmarket. Quantities by Surveyor :—

W. Manders	£412 0 0	E. & L. Plummer	£349 0 0
J. T. Gosling	398 10 6	G. Burgoyne, Ipswich*	299 4 10
G. Double	389 13 9		

UPPERTHORPE.—For erecting an infant school for 400 children, with cookery room, manual instruction workshops, etc., Daniel Hill-street, for the Sheffield Education Committee. Mr. H. L. Paterson, architect, 19, St. James's-street, Sheffield. Quantities by the architect :—

J. W. Winter	£10,393 10	J. & H. Wheen	£8,556 0
A. Moore	9,888 0	J. & T. Robertson	8,461 10
Ash, Son, & Biggin	9,100 0	H. Freckingham	8,400 0
W. & A. Forsdike	9,100 0	Dawson & Jones	8,397 10
W. R. Unwin	8,920 0	O'Neill & Son	8,381 0
Fidler & Sons	8,800 0	Hollingworth & Bedford	8,339 0
Boot & Son	8,775 0	H. Turton	8,325 0
R. & W. Oxley	8,735 0	T. Roper	8,269 0
Wellerman Bros.	8,715 0	Wilkinson & Sons	8,250 0
S. Boul	8,705 0	Ashelby & Son, Sheffield‡	8,089 0
Lee & Kirk	8,675 0		
Longden & Son	8,650 0		
J. White & Son	8,620 0		

[‡ Accepted subject to sanction of Local Government Board.]

WATFORD.—For 140 yds. super. of concrete layer and wood block flooring, to be laid in day-rooms of Union house, for the Guardians :—

	Per yard. s. d.
T. Weedon	10 9
W. King, Watford*	10 3

WOKING.—For alterations and additions to the Masonic Hall, Woking, for the Directors. Mr. H. A. Whitburn, architect, 22, Surrey-street, W.C., and Woking :—

F. J. Kemp	£369 0	J. Whitburn	£320 0
Drowley & Co.	336 0	F. Aylott*	305 10
A. H. Gale	325 0		

WOKING.—For alterations and additions to the Constitutional Club premises, Waking, for the Directors. Mr. H. A. Whitburn, architect, 22, Surrey-street, W.C., and Woking :—

W. Aird	£418 7	Harris & Son	£379 0
A. E. Millard	399 0	F. J. Kemp	352 10
G. Allard	395 0	J. Whitburn*	328 10

WOKING.—For the erection of a lock-up shop for Mr. M. Pratt. Mr. H. A. Whitburn, architect, 22, Surrey-street, W.C., and Woking :—

J. Whitburn	£220 0 0	F. Aylott	£195 14 0
Drowley & Co.	207 10 0	W. Aird	178 5 0
A. E. Millard	201 5 6	G. Allard*	172 10 0

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